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THE PERSONAL SOURCES OF CHRISTIAN SCIENCE.[1]

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"I am a Christian Scientist, the founder of this System of Religion, — widely known, one readily sees that this science has distanced all other religions and pathological systems for physical and moral reformation." These words of Mrs. Eddy furnish a proper point of view for an examination of her cult. A study of the sources of Christian Science is the study of a certain sort of personality. Were the psychology of religion to be put in pathological terms, here indeed is a 'variety of religious experience' — a discordant inner life, a liability to obsessions and fixed ideas, a falling into trances, a series of mental overtensions resulting in self-importance exaggerated to a disease.

Mary Baker was born about 1820, at Bow, New Hampshire, within sight of her present home at Pleasant View, Concord. According to her autobiographical reminiscences entitled 'Introspection and Retrospection,' she counts among her ancestors Scotch Covenanters and English Dissenters, the hero Wallace

[1]References: 'Science and Health,' by Mary Baker Glover, first edition, Boston, 1875; third edition, Boston, 1881, especially the chapter on 'Demonology.' Later editions of 'Science and Health with Key to the Scriptures,' by Mary Baker G. Eddy, are not here used because of their various transpositions, additions and suppressions of compromising contents. 'Miscellaneous Writings,' 1883–1896, Boston, 1899, contain Mrs. Eddy's various articles from the *Christian Science Journal*. 'Retrospection and Introspection,' Boston, 1900.

'The Philosophy of P. P. Quimby,' by A. G. Dresser, Boston, 1899. 'The True History of Mental Science,' by J. A. Dresser, Boston, 1899. Local histories of Concord, N. H., Lynn, Mass., Portland, Me.

and the poetess Hannah More. But the local histories of her native state do not bear out this Pumpernickel pretence. Unfortunately for the pathologist there is little to be gleaned here concerning the family history. However, the young religionist herself described her father as of a strong intellect and an iron will; her mother as a great bible reader and believer in miracles. Thus it is evident that the auditory hallucinations of the daughter were considered veritable calls from heaven. In the section designated as 'Voices not Our Own' there occurs this passage: "For some months, when I was about eight years old, I repeatedly heard a voice, calling me distinctly by name, three times in an ascending scale. I thought this was my mother's voice, and sometimes went to her, beseeching her to tell me what she wanted. * * * This continued until I grew discouraged, and my mother was perplexed and anxious. * * * That night, before going to rest, my mother read to me the scriptural narrative of little Samuel, and bade me, when the voice called again, to reply as he did."

During Mary Baker's childhood her parents removed to the town of Tilton, eighteen miles from Concord and adjacent to the Shaker community of Canterbury. The pervasive influence of these mystic neighbors and their works upon the impressionable mind of the youthful seeress is to be considered later. But Mary Baker's educational opportunities were by no means as scanty as those of the contemporary visionaries and religious founders like Joseph Smith, the Mormon prophet, and Andrew Jackson Davis, the Poughkeepsie Seer, who both wrote not wisely but at length. The incipient Christian Scientist has herself said: "At ten years of age I was as familiar with Lindley Murray's Grammar as with the Westminister Catechism; and the latter I had to repeat every Sunday. My favorite studies were Natural Philosopy, Logic and Moral Science. From my brother Albert I received lessons in the ancient tongues, Hebrew, Greek and Latin. My brother studied Hebrew during his college vacations. After my discovery of Christian Science, most of the knowledge I had gleaned from school books vanished like a dream." The last is the saving clause, the explanation of a paradox. In parts of her writings Mrs. Eddy borrowed her learning and forgot the

sources; in other parts she remembered the sources and forgot her learning. In the former case the amnesia appears real, in the latter fictitious: blank ignorance alone would account for such curious etymologies as are found in the first edition of 'Science and Health,' where Pantheism is derived 'from the Greek god Pan' and Adam 'from the Latin demens.' Without referring to what Voltaire said of comparative philology, it is clear that Mary Baker was nothing if not imaginative. It is therefore hard to say how far the constitutional romancer appears in what she called 'theological reminiscence.' Here she tells how, at the age of twelve, she was admitted to the Congregational (Unitarian) Church, but only after suffering from a fever superinduced by the doctrine of Unconditional Election. Her father's relentless theology, she relates, 'emphasized belief in a final Judgment Day, in the danger of endless punishment, and in a Jehovah merciless towards unbelievers; and of these things he now spoke, hoping to win me from dreaded heresy.' On the other hand it was through the mother's tenderness that the 'horrible degree' of Predestination was exorcised: "She bathed my burning temples * * * I prayed; and a soft glow of ineffable joy came over me. The fever was gone, and I rose and dressed myself, in a normal condition of health." In this personal experience there perhaps lies the key to the curious Eddyite doctrine of the superiority of the feminine principle in matters of religion. At any rate, in terms of the psychology of religion, this conversion was of the optimistic type. It was also precocious; two years before the average of adolescence the change came and Mary Baker left her old church because she was 'not satisfied with a man-like God.'

Succeeding this time of spiritual unrest and recovery there came a period of physical suffering: "When quite a child we adopted the Graham system for dyspepsia, ate only bread and vegetables; and drank water. Following this diet for years we became more dyspeptic, however, and, of course, thought we must diet more rigidly; so we partook of but one meal in twenty-four hours, and this consisted of a thin slice of bread, about three inches square, without water; our physician not allowing us, with this ample meal, to wet our parched lips for

many hours thereafter; whenever we drank, it produced violent retchings. Thus we passed most of our early years, as many can attest, in hunger, pain, weakness and starvation."

Perturbation over theological infelicities, accentuated by ascetic practices, had as a correlate the visionary seizure. "This phenomenon of spiritual discernment," Mrs. Eddy has recently said, "appeared in my childhood, is associated with my earliest memories and has increased with my spiritual increase. It has aided me in healing the sick, and subordinating the human to the Divine. While this metaphysical phenomenon puzzles poor philosophy, and is not in the slightest degree theosophy, hypnotism, clairvoyance or an element of the human mind, I regard it as a component part of the Science of Mind not yet understood." It is significant that this condition of ecstasy, for such it will appear to be, occurred in a locality infested by an American species of illuminati. The author of the 'Autobiography of a Shaker,' who had turned from being a materialist to being a new light, tells how "one night I heard a rustling sound and found that a singular mental phenomenon was going on. I was positively illuminated. My reasoning powers were enhanced a hundred-fold. I came to a conception of the inner world as being the most substantial, and of the inner man as being the real man; the outward world being only the shadow of the invisible world of causation."

The period of mysticism was followed by a period of invalidism; the quietism of malnutrition by the restless pursuit of health. After her first marriage in 1843 the anæmic visionary tried in term allopathy, homeopathy, hydropathy, electricity, spiritualism and mesmerism. These 'medical experiments' in what were bitterly denounced as the various 'isms of mortal mind were succeeded by the 'emergence into light.' "The trend of human life was too eventful to leave me undisturbed in the illusion that this so-called life could be a real and abiding rest." In these health cure experiences is to be found the first step toward the 'great discovery' of 1866. As long ago as 1844, Mrs. Eddy asserts, she was convinced that mortal mind produced all disease, and that the various medical systems were in no proper sense scientific. The further statement that for

twenty years prior to the discovery there was an attempt to trace all physical effects to a mental cause has an ex-post-facto air. As will be seen, the Eddyite system of mental healing was more of an invention than a discovery, was due rather to chance than to cogitation. Nevertheless, the physical side of these experiences may be accepted as valid. They betray, as nothing else could do, the psychopathic condition of the woman. Early in life she had acquired what might be called the sanitarium habit. She next took up vicious schemes of self-cure and began her dabblings in mental healing. Out of these grew an abnormal sensibility. She became squeamish about herself and oversensitive toward others. "We were an homeopathist because of our aversion to the dissecting room. * * * In years past we suffered greatly for the sick." What Mrs. Eddy terms the 'perpetually egotistical sensibility' is doubtless a reason for her present refusal to attempt the cure of others. The mental exertion, the concentrated attention needful for a demonstration would bring a return of this morbid self-consciousness. Hence she says: 'My own personality afflicteth me not willingly, for I desire never to think of it.'

Further details of these days of the search after health are given in certain suppressed letters. In 1861 Mrs. Eddy's second husband, Dr. Patterson, wrote to Dr. Quimby, a magnetic healer of Maine, asking aid of Quimby's 'wonderful power' in behalf of his wife, who had been for six years an invalid unable to sit up. Mrs. Patterson next writes herself from a New Hampshire water cure that she hopes to reach Quimby, as she is 'sufficiently excitable' to live through the journey. That this correspondence is substantially true is borne out by further letters in the public prints. As to her invalidism she says: "In 1862 my name was Patterson; my husband, Dr. Patterson, a distinguished dentist. After our marriage I was confined to my bed with a severe illness, and seldom left bed or room for seven years, when I was taken to Dr. Quimby, and partially restored." But regarding the success of this mental healer, Mrs. Patterson had given more positive testimony in the Portland *Courier* of 1862. "Three weeks since, I quitted my nurse and sick-room en route for Portland. The belief of my recovery had died out

of the hearts of those who were most anxious for it. With this mental and physical depression I first visited P. P. Quimby, and in less than one week from that time I ascended by a stairway of one hundred and eighty-two steps to the dome of the City Hall and am improving *ad infinitum.*''

According to her 'Miscellaneous Writings,' that *journal intime* for the faithful, the mid-period of Mrs. Eddy's life was a chapter of accidents. She married in haste and repented in the divorce courts; she met the man from whom she is alleged to have pilfered her system of drugless healing; she finally suffered a fall which injured her seriously. Four years after this there befell her an accident, the effects of which are now visible in a lameness of limb and a palsied shaking of the head. A letter of 1866 from Lynn, Massachusetts, to a pupil of Quimby reads in part thus: "Two weeks ago I fell on the sidewalk and struck my back on the ice, and was taken up for dead, came to consciousness amid a storm of vapors from cologne, chloroform, ether, camphor, etc., but to find myself the helpless cripple I was before I saw Dr. Quimby. The physician attending said I had taken the last step I ever should, but in two days I got out of my bed *alone* and *will* walk; but yet I confess I am frightened, and out of that nervous heat my friends are forming, spite of me, the terrible spinal affection from which I have suffered so long and hopelessly. * * * Now can't *you* help me? I believe you can. I write this with this feeling: I think that I could help another in my condition if they had not placed their intelligence in matter. This I have not done, and yet I am slowly failing. Won't you write me if you will undertake for me if I can get to you?"

In passing to the fourth period in the life of the founder of Christian Science we may employ a phrase from Hawthorne's romance of transcendentalism: "The weakly maiden, whose tremulous nerves endow her with Sibylline attributes, has now become the Veiled Lady." This desire to be mysterious explains the discrepancies between the earlier and later accounts of the accident. The time of recovery was made more rapid, the process more magic, until it was counted the turning point leading to the 'great Discovery of the spiritual science of

Mind-healing.' According to the original document the patient was still suffering two weeks after the fall. Another version says that, three days after her accident was pronounced fatal, she read Matthew IX., 2, and thereby learned that life was the sole reality of existence, that mortal thought evolves a subjective state which it names matter. The third and fourth accounts should be given at length, since the one exhibits the writer's manner of qualifying previous damaging statements, and the other presents the developed theory of metaphysical healing. "At Swampscott, Mass., in 1866, we recovered in a moment of time from a severe accident, considered fatal by the regular physicians, and regained the internal action that had stopped and the use of our limbs that were palsied. To us this demonstration was the opening of the new era of Christian Science. We then gained a proof that the principle, or life of man, is a divine intelligence and power, which, understood, can heal all diseases, and reveals the basis of man's immortality. But the minds around us at that time were unacquainted with our mental theory." The fourth account is the fullest and has a glossary tacked to it. "My immediate recovery from the effects of an injury caused by an accident, an injury that neither medicine nor surgery could reach, was the falling apple that led me to the discovery how to be well myself, and how to make others so. Even to the homeopathic physician who attended me, and rejoiced in my recovery, I could not then explain the *modus* of my relief. I could only assure him that Divine Spirit had wrought the miracle — a miracle which later I found to be in perfect scientific accord with divine law. I then withdrew from society about three years, to ponder my mission, to search the Scriptures, to find the science of mind, that should take the things of God and show them to the creature, and reveal the great curative principle, Deity. The Bible was my text-book. It answered my questions as to how I was healed; but the scriptures had to me a new meaning, a new tongue. Their spiritual signification appeared; and I apprehended for the first time, in their spiritual meaning, Jesus's teaching and demonstration, and the principle and rule of spiritual science and metaphysical healing, in a word, Christian Science. I named

it *Christian*, because it is compassionate, helpful and spiritual. God I called *Immortal Mind*. That which sins, suffers and dies I named *mortal* mind. The physical senses, or sensuous nature, I called *error* and *shadow*. Soul I denominated *substance*, because soul alone is truly substantial. God I characterized as individual entity, but his corporeality I denied. The real I claimed as eternal; and its antipodes, or the temporal, I described as unreal. Spirit I called the *reality*, and matter, the *unreality*."

The humdrum sources of this curious amalgam of medicine, metaphysics and religion are to be traced with some exactness. Mr. Eddy's own opinion of her system should first be given. She declared it to be the 'first purely metaphysical system of healing since Apostolic days,' founded on a 'basis so hopelessly original' that all other systems of mental healing are plagiarisms from "the precious book 'Science and Health.'" As to the origin of this volume Mrs. Eddy explains: "I should blush to write of 'Science and Health with Key to the Scriptures' as I have, were it of human origin, and I, apart from God, its author; but as I was only a scribe echoing the harmonies of Heaven in divine metaphysics, I cannot be supermodest of the Christian Science text-book."

But this is anticipating: before the period of printer's ink and money-making there was a period of struggle and fear. Before 'Science and Health' reached its three hundredth edition the rediscoverer of 'divine' healing was making a precarious living as a mental healer by performing 'recuperative incidents.' By 1877, the year of her marriage to Mr. Eddy, she was apparently in a state of panic dread lest she be hoist with her own petard. When the hopeless invalid besought the magnetizer Quimby to visit her in his 'omnipresence,' she evidently believed that mental therapeutics was both local and long distance. This anticipated doctrine of telepathy, by a peculiar sort of feminine logic, was considered a reversible doctrine. By the 'law of opposites' it might do evil as well as good: "A mind taught its power to touch other minds by the transference of thought, for ends of restoration from sickness, — this mind, by misusing its freedom, reaches the degree of total moral de-

pravity. * * * In coming years the person or mind that hates his neighbor will have no need to traverse his fields, to destroy his flocks and herds, and spoil his vines; or to enter his house to demoralize his household; for the evil mind will do this through mesmerism; and not in propria personæ be seen committing the deed. Unless this terrible hour be met and restrained by science, mesmerism, that scourge of men, will leave nothing sacred when mind begs to act under direction of conscious power." It is interesting to note that Mrs. Eddy acknowledged her doctrine of malicious animal magnetism to be a sort of recrudescence of the Salem witchcraft. More pertinent is the evidence of her earlier writings as to her pathological state. "Our readers," she says in the third edition of her text-book, "may feel an interest to learn something of the indications of this mental malpractice, or demonology. So far as we have traced it, it has not outward signs, such as ordinarily indicate mesmerism, and its effects are far more subtle, because of this. Its tendency is to sour the disposition, to occasion great fear of disease, dread and discouragement, to cause a relapse of former diseases, to produce new ones, to create dislikes or indifference to friends, to produce sufferings in the head, in fine, every evil that demonology includes and that metaphysics destroys. If it be students of ours whom he attacks, the mental malpractitioner tries first to produce in their minds a hatred of us, even as the assassin puts out the light before committing his deed."

But to leave this Iliad of woes. The successive stages of adolescent brooding, of trance, of invalidism, of experiments in health cures, of social ostracism had culminated in a state of neural instability and morbid subjectivism. Now the busy objective world relieved the woman from what might have been serious mental impairment. Mrs. Eddy's native ability and Yankee shrewdness had a chance to assert itself, and Boston saved her brain. Soon after the founding of the Church of Christ, Scientist, considerable forethought was shown in the substitution of readers for preachers and in the frequent disbanding of the organization. Personal exposition, private interpretation of the new Scriptures might have led to heresy and schism. Hence the order went forth that the pastors of the

church were not to expound but simply to read 'Science and Health' and always in the latest edition. Then there was the scheme of local decentralization — a scheme, as some one has cynically observed, as effective in preventing disaffection as the constant disbanding of a Boer commando. These measures cannot positively be taken as a test of the mental calibre of the veiled prophetess; they may have emanated from her male advisers. Yet she herself originated one of the most paying of the Christian Science institutions. In 1867 she began by teaching one student Christian Science Mind-healing. From this seed grew the Massachusetts Metaphysical College in Boston, chartered in 1881. This institution for drugless healing was successfully opposed by the regular practitioners, the matter-physicians not the meta-physicians as they were dubbed. It was closed by the so-called anti-diploma law of 1883, 'after accomplishing the greatest work of the ages,' said its originator. It throws some light on the character of the spiritual healer to read her explanation of the size of her fees. "When God impelled me to set a price on Christian Science Mind-healing, I could think of no financial equivalent for the impartation of a knowledge of that divine power which heals; but I was led to name three hundred dollars as the price for each pupil in one course of lessons at my college; a startling sum for tuition lasting barely three weeks. This amount greatly troubled me. I shrank from asking it, but was finally led by a strange Providence to accept this fee. God has since shown me in multitudinous ways the wisdom of this decision."

This period of prosperity needs a further word of description as introductory to the last period in the life of Mother Eddy, the period of practical deification. In this we are not concerned with the mentality of the follower but of the founder. The obligatory purchase by each disciple of the latest expensive edition of the text-book, the sending of five-hundred-dollar cheques for absent treatment may be cause for astonishment. Yet back of the financial there was the psychic element. That Mrs. Eddy has been successful in treating many nervous, non-organic troubles cannot be denied. For all that there are strange contradictions in the business. That she and her

devotees could not inhibit by will power the activities of the wilful microbe is virtually acknowledged in the recent manifesto from Concord; that in case of contagious diseases, and in order to keep within the law, a regular practitioner may be called in. However, the arch-healer still holds to her assertions that she has cured consumption in its last stages, the lungs being mostly consumed; that she has healed carious bones which could be indented with the fingers, while the doctors were preparing their instruments for operation; and that she has healed at one visit a cancer that had so eaten into the flesh of the neck as to expose the jugular vein, so that it stood out like a cord.

Suggestive therapeutics, the mental factor in control of disordered physiological functions, goes far to explain the last stage in the life of the high priestess, her elevation to a more than human plane. Thus a disciple tells how, in a public meeting in 1888, the audience rose after Mrs. Eddy's address; the people were in the presence of the woman whose book had healed them, and they knew it. They came in crowds to her side begging for one hand clasp. A mother held her sick baby up. Others touched the dress of their benefactor. A palsied woman held up her shaking hands and went away healed. The other side of this picture is given by the thaumaturgist herself. "It was not uncommon in my own church for the sick to be healed by my sermon. Many pale cripples went into the church leaning on crutches who went out carrying them on their shoulders."

In subsequent meetings Mrs. Eddy simply appeared on the stage, bowed, and disappeared. In 1889 she withdrew to her native state and her invisibility increased her reputation. Lest by any means this withdrawal should mean a loss of influence, in the absence of the sacred person, the sacred thing was substituted. A modern form of fetish worship arose. There was the Mother Eddy souvenir spoon which the faithful were urged to buy and mark for their inward digestions. There was also the booklet entitled 'Christ and Christmas' in which the author is represented with a halo around her head. Of this one reader asserted, 'looking at the pictures in your wonderful book has healed my child.'

Another step in the process of deification now occurred. Mrs. Eddy claimed inspiration for her utterances. In her 'Miscellaneous Writings' she says, "the works I have written on Christian Science contain absolute truth. * * * Christian Science is the soul of divine philosophy and there is no other philosophy. * * * It is not a search after wisdom, it is wisdom. * * * When God speaks I listen." The final step in this process was the assumption of a superhuman personality. As 'Mother' Eddy she has cautiously but virtually acknowledged herself to to be the 'feminine principle of the Messianic expectation.' For example, she says: "Jesus' immortal words were articulated in a dead language. Christian Science was to interpret them and woman to awaken the dull senses. * * * Jesus was the masculine representation of the spiritual idea. The Divine Science was the immaculate idea represented first by man and last by woman. * * * No person can take the place of the author of 'Science and Health,' the discoverer and founder of Christian Science."

Thus far Mrs. Eddy has given this picture of herself: in youth indifferently educated, anæmic and subject to trances; in middle age an unhappy invalid whose condition was ameliorated by the suggested mental treatment of another and by her own strong will; lastly in old age the acknowledged leader of what she styles 'the seventh modern wonder, a mighty system of metaphysical healing.' The task now before us is to compare this system with various contemporary records and show how the more bizarre doctrines of the day worked their devious way into the mind of the New Hampshire seeress. The doctrines may be intrinsically worthless, but their excogitation affords a glimpse of the mental processes of a sectary. Primitive Christian Science, as given in the first edition of 'Science and Health,' was a back-door philosophy. Its sources were provincial, its derivation accidental. To put some method into its madness, in a tentative way its theology may be traced to the Shakers; its therapeutics to the mesmerists; its metaphysics to the homeopathists. That this eclecticism had a dash of New England transcendentalism is true only if we accept Emerson's definition of that movement as the Saturnalia or excess

of faith, wanting the restraining grace of common sense. Furthermore, this summary statement is to be modified by the personal equation. Christian Science was of the feminine-mystic type; it was expounded by the 'Reverend' Mary Baker Glover Eddy. Its method of cure was hieratic; it was 'a pathology of spiritual power, a science to meet sin and uncover it.' Lastly, its philosophy, if such it had, was neurotic. It was a crude immaterialism based on youthful hallucinations and persistent trances.

The whole system was called by its inventor 'hopelessly original.' In truth it was to one ignorant of the elusive courses of abnormal psychic visitations. As to the earlier lucubrations there is no need of charging Mary Baker with downright prevarication. The most unique of her philosophizings appear to have been the product of unconscious mentation, expressed in terms of a perverted emotional sensibility. In two respects she resembled Emerson's description of the heroine of the 'Blithedale Romance'; she was self-deceived by her own phantasms; she possessed the dangerous vertigo nature. Along with this abnormal personality we may expect the concomitants of a more or less subnormal activity. There was a youthful amnesia; there was also a certain subconscious retention of vaguely apprehended fragments of knowledge. Mrs. Eddy's 'spiritual syntax' was said to be due to the fact that Mary Baker's book-knowledge 'vanished like a dream.' At the same time in the production of the sacred writings there was the insistence of the fixed idea, the claim of an impulsion 'by a power not one's own.' That there was here mentation of an automatic order the writer evidently had no inkling. Whether the first pastor of the Church of Christ, Scientist, is to be considered an inspirational speaker depends upon the attitude of the hearer. Nevertheless, her books still bear the ear-marks of inspirational writing, vapid generalization, vain repetition and crude alliteration: 'matter is manifest mortal mind * * * pleasure and pain are mists of mortal mind.' If these tricks of style betray a poverty of normal thought, there were other ways of getting ideas. A half unconscious borrowing of current opinions explains the welter of notions in the early documents. So to

return to origins and to trace the first of the sources of Christian Science.

To the 'unspiritual and ungodly' the Eddyite theology is said to be 'dark and difficult'; to the psychologist it appears but the recrudescence of latent memories, the more or less unconscious transcription of stored impressions. Bearing in mind that during the period of her youthful trances Mary Baker lived near the Shakers, it is to be presumed that she unwittingly imbibed many of the doctrines of this peculiar people. At the outset there are many minor resemblances between 'Science and Health with Key to the Scriptures' and the 'Holy, Sacred and Divine Roll and Book of the United Society of Believers.' There is the same tirade against rationalism and materialism, the same symbolical interpretation of the Bible, the same prediction of a last dispensation of spiritual healing. This manual of the 'Church of Jesus Christ and Mother Ann' also claims that 'Shakerism is the only religious system that teaches Science by Divine Revelation.'

But chapters sixteen and seventeen afford the most striking analogies. They are headed thus: "Christ's second appearing in the female, her office as Spiritual Mother. The Female had never been revealed in her sacred order before this dispensation. * * * Of what was manifested in Mother. In her was displayed my sacred and saving power to search the hearts and penetrate into the souls of such as came before her." Of the Englishwoman Mother Ann Lee's pathological experiences — her trances, visions and distressing ascetic practices, it is unnecessary to speak. Our concern is with the strange reappearance of her doctrines and their incorporation into an American cult. We need only put in brief parallels some of the statements of Shakerism and Eddyism to see how intimately connected they are. To Ann Lee was given 'the endearing term of Mother'; to Mrs. Eddy was given 'the endearing term of Mother.' To Ann Lee, the Woman clothed with the Sun was 'the divine spiritual intuition as representing the Mother in Deity'; to Mrs. Eddy she was 'the spiritual idea or type of God's Motherhood.' To Ann Lee marriage was 'the celibate spiritual union of the sexes'; to Mrs. Eddy it was 'the spiritual unity of male and female.'

Here, it appears to me, is the clue to the curious dualistic notions found in Christian Science. Like Joseph Smith and his 'Book of Mormon,' Mary Baker inadvertently absorbed certain environmental beliefs of the baser sort. In another Shaker compendium are given the grounds of this dualism. "In the last cycle," it was asserted, "Christ would come again to some other individual. This second coming must of necessity have been to a woman because the race is female as well as male."[1]

The second source of Christian Science was mesmerism and the allied methods of mental healing. Mrs. Eddy acknowledges as much: 'Take away the theology of mental healing and you take away its science, leaving it a human mind cure that produces the effect of mesmerism.' The writer's familiarity with this black art of the day has been already mentioned. How it reached her is a bit of back stairs history. Animal magnetism proper had been discredited throughout the land by the efforts of Benjamin Franklin, who was one of those signing the Report of the Commission of the French Academy of Sciences. But two generations later it gained a footing in America. It was in 1837 that a Frenchman, Charles Poyen, who had been cured 'mesmerically' of a nervous disorder, published his 'Progress of Animal Magnetism in New England.' In this he tells of his travels in the very towns of Massachusetts, Maine and New Hampshire, where Mrs. Eddy later lectured and practised. That she was conversant with what he taught is likely from the similarity between his six mesmeric phenomena and the elements of her teaching. His 'suspension of the external sensibility' was her 'unconsciousness.' His 'intimate connection with the magnetizer' was her 'mesmeric connection between you both.' His 'influence of the will' was her 'will power.' His 'communication of thought' was her 'absent treat-

[1] The two Shaker books from which I have quoted were written near Mrs. Eddy's home and before her first marriage. She may yet have had other than literary sources to depend upon. Her brother worked in the law office of General Franklin Pierce who was counsel for the Shakers in their trial at Concord in November, 1848. To those who care to go further into the affinities between esoteric Christian Science and Shakerism, the chapter on 'Marriage' in the first edition of 'Science and Health,' should be compared with 'Holy Mother's promises given by Inspiration' as contained in the 'Report of the Examination of the Shakers of Canterbury and Enfield before the New Hampshire Legislature.'

ment.' His 'clairvoyance' was her statement that 'the mesmerized subject sees with closed eyes.' His 'faculty for seizing the symptoms of disease and prescribing the proper remedies for them' was what she meant by 'healing the sick without seeing them.'

In the same year as Poyen's book came Durant's 'Exposition, or a New Theory of Animal Magnetism with a Key to the Mysteries.' In this animal magnetism is declared to be a 'branch of electricity, a science which gives a new life to the religious principle (furnishing unconquerable weapons to Christianity against materialism), creates a new method of pathological investigation and settles therapeutics on a basis hitherto unknown to the medical world.' Within another generation an Americanized form of mesmerism — Dr. Grimes' electro-biology — was known to high and low. The poet Whittier was familiar with it, while Mrs. Eddy wrote in the Portland *Courier* of 1862 as follows: I have employed electro-magnetism and animal magnetism, and for a brief interval have felt relief from the equilibrium which I fancied was restored to an exhausted system, or by a difference of concentrated action, but in no instance did I get rid of a return of all my ailments, because I had not been helped out of the error in which opinions involved me.' This confession has been used by the opponents of Mrs. Eddy in the attempt to prove that she stole her doctrines from the Portland magnetic healer Quimby. At first sight Eddyism might seem to be nothing but Quimbyism. He taught a 'Science of Health'; she wrote 'Science and Health'; both employed the term 'Christian Science.' Again Mrs. Eddy has her 'reversed statements,' propositions which are offered as self-evident because they read backward. She propounds this concatenation: 'There is no pain in Truth, and no Truth in pain; no matter in mind and no mind in matter; no nerve in Intelligence and no Intelligence in nerve; no matter in Spirit and no Spirit in matter.' Similar patent reversibles are to be found in Quimby's 'Science of Man': 'Error is sickness, Truth is health; Error is matter, Truth is God; God is right, error is wrong.'

Finally there are many points of resemblance between Quimby's Portland circular of 1859 and Mrs. Eddy's defence of

his system in 1862. The former alleged, "My practice is unlike all medical practice. * * * I give no medicines, and make no outward applications, but simply sit by the patient, tell him what he thinks is his disease, and my explanation is the cure. If I succeed in correcting his errors, I change the fluids of his system, and establish the truth or health. *The truth is the cure.*"

Mrs. Eddy's apology for her master ran thus: "My operator believed in disease independent of the mind; hence, I could not be wiser than my teacher. But now I see dimly at first, and only as trees walking, the great principle which underlies Dr. Quimby's faith and works; and just in proportion to my light perception of truth is my recovery. This truth which he opposes to the error of giving intelligence to matter and placing pain where it never placed itself, if received understandingly, changes the currents of the system to their normal action; and the mechanism of the body goes on undisturbed. That this is a science capable of demonstration becomes clear to the minds of those patients who reason upon the process of their cure. The truth which he establishes in the patient cures him."

But it is needless to go further into this muddy question of plagiarism. There is no real issue between the Eddyite and the Quimbyite, because the head of each school drew their philosophic trickles from a common source. One of the chief ex-Christian Scientists himself grants that there was a near approach to the theory and practice of Dr. Quimby in the contemporary investigation of John Bovee Dods, who believed that electricity was the connecting link between mind and matter, that disease originated in the electricity of the nerves and can be cured by a change of mind. Turning to the 1851 edition of Dr. Dods' book, the 'Philosophy of Electrical Psychology,' there can be found passages reflected in both the writings of Dr. Quimby and Mrs. Eddy. Thus the former was said to change the 'currents of the system to their normal action,' while the latter asserted that electricity is the essence of mortal mind, the least material form of consciousness.

But to turn the study of Christian Science into a study of comparative literature is a trifle too ponderous. It was from the

vaporings of itinerant magnetizers that Mrs. Eddy sucked in her primary notions. The quacks were drawing full houses in New England at the very time she was on her pilgrimage after health. Hence the 'true history of Mental Science' is to be traced, not to the only original Quimby, but to the indiscriminate practice of mesmerism along in the forties and fifties, and to the crude attempts of Yankee philosophizers to explain the borderland phenomena of hypnoidal states. Some of these crude attempts are to be found in Mrs. Eddy's primitive publications. Thus, she says: "In Mesmerism pain is only a suggested belief. * * * That sight is not in the eye is apparent when the mesmerized subject sees through different portions of the head. * * * Any mental link touching mind, though bodies are leagues apart, is sufficient to reproduce these to the clairvoyant; if the individuals have passed away, their aroma of thought is left, which is mentally scented and described. Mind has senses sharper than the body."

Out of this perception of a real hyperæsthesia with spiritualistic trimmings there was evolved a doctrine of supersensible apperception: "Clairvoyance is mind-reading alone, whereas science in contradistinction to clairvoyance reveals truth through the understanding, by which we gain the principle and explanation of phenomena; these are distinctly opposite standpoints whence to obtain information; and the right interpretation of cause and effect, belongs alone to science. Clairvoyance reaches only the fancied realities of mortal mind, whereas science admits none of these things, but admits truth, outside of mortality and error." This is only the beginning of the author's attempt 'to meet the deep demand of the Science of Psychology.' As steps to her doctrine of immaterialism she cites anything that happened to puzzle her mind, for example, 'the phenomenon of mediumship' and 'the mischievous link between mind and matter, called planchette.'

If in any sense Mrs. Eddy may be said to have transcended the current philosophy below stairs, it was only by kicking over the ladder by which she mounted. Her method of attaining the heights of truth was to spurn the assertions of her contemporaries. As her reminiscences insinuate, theirs was the impo-

sition, hers the demonstration. 'In contradistinction to the 'ism of spiritualism,' she put as her 'scientific basis' of mind: that 'soul gives utterance to itself when sense is silent. Soul sets man free, which explains the phenomena of impromptu poets and uneducated orators.' In brief, the Eddyite theory of knowledge here appears to be an approach to the automatism of inspirational speaking and writing. But this would be a fatal admission; it would fit too closely the sing-song style and alliterative tricks of her who denies ever being a trance medium.

This feminine logic, this happy way of employing many premises and avoiding any conclusions, might be given as a proof of the authenticity of 'Science and Health'; at any rate it makes it unnecessary to linger much longer over it. There are, however, some further biographical details which illustrate the manner in which the female sage of Concord worked up her system of blank immaterialism. Having done with spiritualism and mediumship the author next takes up medicine. "The physical side of this research was aided by hints from homeopathy, sustaining my final conclusion that mortal belief, instead of the drug, governed the action of material medicine. I wandered through the dim mazes of *Materia Medica*, till I was weary of 'scientific guessing,' as it has been well called. I sought knowledge from the different schools — Allopathy, Homeopathy, Hydropathy, Electricity, and from various humbugs — but without receiving satisfaction. I found in the two hundred and sixty-two remedies enumerated by Jahr, one pervading secret, namely, that the less material medicine we have, and the more mind, the better the work is done; a fact which seems to prove the principle of mind-healing. One drop of the thirtieth attenuation of *natrum muriaticum*, in a tumblerful of water, and one teaspoonful of the water mixed with the faith of ages, would cure patients not affected by a larger dose. The drug disappears in the higher attenuations of Homeopathy, and matter is thereby rarefied to its fatal essence, mortal mind; but immortal mind the curative principle remains, and is found to be even more active."

These hints from a diluted Hahnemannianism do not give the earliest steps to the Eddyite adumbration of the really real.

Like a contemporary Shaker with his 'inexpressible something' she obtained in certain mystic experiences her first glimpse of what she called 'the eternal somethingness': "There have always attended my life phenomena of an uncommon order, which spiritualists have called mediumship, but I clearly understand that no human agencies were employed. * * * The recognition of the power of the Spirit came to me through the spiritual sense of the real, and of the unreal and mortal sense of things." These two fragments of experience demand their psychopathic interpretation. As the 'voices not our own' were auditory hallucinations, the 'phenomena of an uncommon order' were mere trances. They were veritable psychoses, yet the ecstatic having but a confused remembrance could with difficulty recall and describe them. Inasmuch as they transcended normal thought and experience they were ineffable. Hence if the ordinary reader desires to grasp the Christian Science epistemology he is informed that, as a literature, Christian metaphysics is hampered by a lack of proper terms in which to express what it means. This prairie-dog way of getting out of difficulties by falling into a hole leads to the other subterranean experience. The second passage concerning the Eddyite theory of spiritual insight has a similar interpretation and an equal significance in the building up of the system. The 'recognition of the unreal sense of things' may be laid to a temporary absence of conæsthesia. In this loss of the sense of the compact reality of the bodily organism is to be found the final flimsy basis of this latter-day doctrine of immaterialism.

In tracing the sources of Christian Science by isolating special factors in the psycho-physical development of its founder, her 'Science of Mind, the All-in-all of Spirit' is seen to be in large part the morbid outgrowth of an abnormal personality. Yet this sketch would not be complete without a reference to the saner influences which left their mark on her system. Besides the Shakers, the mesmerists and the homeopathists, the New England transcendentalists indirectly contributed to her 'divine metaphysics.' There is no need of Mrs. Eddy's denying her indebtedness to Emerson. In comparison with her subjective denial of matter, of evil, of sin, of everything that did

not suit her personal fancy, his solipsism was a common-sense dualism. Yet between the two Concord schools of philosophy there was an essential, albeit a perverted resemblance. The transcendentalism of the New Hampshire cult has succeeded for much the same reasons as those given for the success of the Massachusetts cult. The earlier movement has been described as possessing "all the chief qualifications for a gospel. Its cardinal facts were few and manageable. Its data were secluded in the recesses of consciousness, out of the reach of scientific investigation, remote from the gaze of vulgar scepticism; esoteric, having about them the charm of a sacred privacy, on which common sense and the critical understanding might not intrude. Its oracles proceeded from a shrine, and were delivered by a priest or priestess, who came forth from an interior holy of holies to utter them, and thus were invested with an air of authority which belongs to exclusive and privileged truths, that revealed themselves to minds of a contemplative cast. To the pure transcendentalist the soul when awakened utters oracles of wisdom, prophesies, discourses grandly of God and divine things, performs wonders of healing on sick bodies and wandering minds."[1]

Certain more formal resemblances between these two movements may be given as final proof of the experiential and eclectic nature of Mrs. Eddy's system. It would be too much to say that she ever reached the great upper air currents of Emersonian idealism, yet in so far as her morbid nature allowed she tried to breathe the atmosphere of supersensible forms of thought, attempted to approach the realm of the absolute right, the unconditioned excellence, the eternally true. How far original Christian Science was influenced by contemporary literature it would be hard to say. These were books of the day which had a sort of anticipated Eddyite terminology. Out of the narrow circle illuminated by the Boston pundits there came such works as James Walker's 'Philosophy of Man's Spiritual Nature,' Frothingham's 'Philosophy as Absolute Science,' Henry James' 'Shadow and Substance.' But a comparison be-

[1] O. B. Frothingham, 'Transcendentalism in New England,' New York, 1876, page 303.

tween these works and 'Science and Health' turns into a contrast. From internal evidence alone we may be sure that Mrs. Eddy's only hovered about the penumbra of Cambridge culture. If any literature influenced her mortal mind it must have been a variety of philosophic chap-books such as the anonymous pamphlets 'The Panidea or an Omnipresent Reason,' and 'The New Science or Mental Theology.' Some of these crumbs from the feast of reason were undoubtedly within the reach of the wandering seeress. As she had been an experimenter in systems of mental hygiene, she now became a taster of random idealistic speculations. A twisted transcendentalism gave direction to her religious convictions and the result was that 'immortal sentence' in answer to the question: 'What is the Scientific statement of being? *Answer*. There is no life, substance, or intelligence in matter; all is mind; there is no matter. Spirit is immortal truth, matter is mortal error. Spirit is the real and eternal, matter the unreal and temporal. Spirit is God, and man is His image and likeness; hence, man is spiritual and not material.'

THE CASE OF JOHN KINSEL. II.

BY GEORGE B. CUTTEN, M.A., PH.D.

The summer following his graduation, he took an agency which required him to be away from home some of the time. During this time he was 'asleep' a week at a time, and thus met with some disagreeable experiences. One of these resulted in the breaking of the engagement between his fiancee and himself. He was in a neighboring town, working on his agency when he went to 'sleep.' The next move was to get beastly intoxicated, and then he boarded the train and went to see his sweetheart. She knew nothing of his trouble and naturally considered this a voluntary intoxication; but she considered also that he had been deceiving her, for she had not been told that he drank, and further considered it inconsistent with the ministry. Taken all together she immediately broke the engagement, and no explanations would suffice to atone for the way in which he presented himself on this occasion.

In the fall John entered the Divinity school, but on the advice of his physician he did not complete the first term, but returned to his home on the farm. Since that time he has spent most of his time at his home, working on the farm, and teaching school in his district. He has been away for short intervals on agencies of different kinds. He had one or two attacks of his abnormality while in the Divinity school, but after he returned home the attacks became less frequent, and of less duration when they did come, until in the spring following his graduation from college he had his last attack up to the present time.

John's eyes were a source of constant trouble to him, and probably contributed not a little to his other trouble. In the college town one oculist assisted in the frequent change of his glasses, enabling him to get 20-50ths vision. This treatment lasted from November 10, 1894, to January 11, 1897. The oculist who had most to do with this case resided in a neighboring town, not far from John's home. He has kindly sent

the following details: "My acquaintance with Mr. Kinsel dates from October, 1883, when he was eleven years old. The story was that he was always considered extremely near-sighted, from his evident bad distinct vision, and from his way of holding a book within a few inches of his eyes. A year before he came someone had discovered a whitish appearance of his pupils. I found both crystalline lenses somewhat opaque, especially at their posterior parts (posterior polar cataract). His vision was right eye 15-70ths of normal, and his left eye 10-70ths. With his right eye he could read No. 6 (fair book) print, and with his left eye No. 16 (very large) print, at about six inches. I advised no treatment for six months, and that he should come again then to let me see what changes if any were going on.

"I next saw him April, 1888, and found the changes were very slight for five years. At this time his vision was, for right eye 15-50ths, and for the left 15-80ths.

"Again I saw him in September, 1899, after his graduation from college. His vision at this time was, for right eye 20-70ths, and for the left 20-100ths, with convex glasses. I advised operation on the left eye by the method known as 'needling.' The first operation was done on November 6, 1899, and was followed by no unpleasant reaction. Three more operations were done on this eye at intervals, all without subsequent pain or trouble, and on December 18, 1900, I found vision of the left eye with appropriate glass — to take the place of the (dissolved) lens — was 20-30ths +, or almost normal; and he could read the finest type at ten inches. I realized, as he did not, the dangers he had so fortunately escaped, and inclined to advise him to be satisfied with one good eye; but he insisted that the other one be operated on.

"On December 30, 1900, I did the first operation on the right eye; there was no reaction. On March 1, 1901, I did the second. This made the fifth operation on him, and as there had been no reaction following any of them, I think I overestimated his resisting power, and in my desire to get on with a less number of operations than had been required for the other eye, I operated more freely than I had formerly done. As a

result he had within twelve hours an attack of acute glaucoma, for which there is but one thing to do, viz., the operation of iridectomy. This stopped the fearful pain and quieted the inflammation, but left him with vision of only 1-70th in this eye due to the thickening of the lens capsule. I was unwilling to attempt further operation till March 1, 1902, when I made a section of the capsule, and on March 8, 1902, he had vision of 20-50ths with prospect of further improvement.

"During the last year the vision of the right eye has fallen off to 20-70ths, owing to the thickening of the capsule. A recent needling operation has restored the vision to 20-40ths.

"These cases of posterior polar cataract are not usually considered favorable for operation, as they are apt to be accompanied by some diseased condition of the nerve. This in his case proved not to be so; certainly not in the left eye and I think not in the right one. They are not cases in which the conservative oculist often urges an operation, he usually waits until the patient demands it, as was the case with our friend. He * * * was eager to make an experiment of his worst eye. I consented with some misgivings, and am glad now that I did."

As has been said, the abnormal states in their usual form stopped in the spring of 1898, but in the fall of 1900 he developed a real dipsomania. Let us look at the alcoholic history of his case which has been reserved for this place. His heredity, which has been given, reveals that his maternal great-grandfather, grandfather and great-uncles all drank heavily; but neither his mother nor any of her brothers or sisters drank. All the Kinsels drank, and there is a direct history of alcoholism on this side of the family as far as it can be traced. Add to this the unstable neurotic diathesis, and we have splendid soil for the development of dipsomania.

John drank cider at home when a boy, but was never intoxicated but once. When seven years of age, his mother being away, he climbed up in the pantry and took from the shelf some cider brandy and drank enough to intoxicate him. He never drank anything but cider and this cider brandy until he was fourteen, when he had a glass of beer. When twenty-one years old, being in the sophomore class in college, he drank on one

occasion beer and wine, and on another occasion claret lemonade. On the former of these occasions he became 'happy.' The following summer he drank cider at home.

In the junior year he only drank when in these abnormal states. His beverage was mostly beer, very little of which would intoxicate him. During the summer vacation, between his junior and senior years, he drank nothing at all, not even the cider at home. In the senior year he drank a great deal, but only in the abnormal states, except that sometimes he would come out of the abnormal state into the normal, partially intoxicated; then he would continue drinking in the normal state. But never was drinking initiated in the normal state.

During the summer following graduation he drank twice in his abnormal state, and both times was very much intoxicated. In the autumn while in Divinity school he drank some, but not sufficient to cause intoxication. He knew that he had been drinking by the smell of beer on his breath when he awoke. This is very interesting in showing the severance of the two states, for normally we cannot smell anything that we have partaken. After leaving the Divinity school, in January of the following year, he drank some cider when normal as well as during the abnormal state. This was the first of a desire to drink when normal, and was gratified by cider. He also smoked very heavily during this time.

In April of that year, 1898, he went fishing with some men who had wine and whiskey, and here we have the first voluntary intoxication. He drank cider all that summer and autumn, but not to intoxication, and continued very light or no drinking during the following winter, spring and summer. The following autumn, 1899, he drank considerable cider, on one occasion sufficient to intoxicate him; he also got intoxicated on beer. The subsequent winter he got 'happy' several times on cider, drank cider all the spring and summer, and in the early fall developed a true dipsomania with monthly periods, which continued all the fall and winter, the last one being on March 19, 1901. During these periods whiskey or any intoxicants were drunk.

On March 20, he came to the writer for treatment. He had had two drinks that morning, but as he had previously been hyp-

notized, and was an excellent subject, no difficulty was experienced in hypnotizing him. He slept deeply and appropriate suggestions were given. He came again on the following day and on April 16, 17 and 18, the last three being just previous to the time for his next outbreak. He went away and the next day the craving appeared on time, contrary to suggestion. He went to a saloon and procured a glass of beer, went to another saloon and got another glass. He went into a third saloon, purchased and drank a third glass of beer, when he began to know (he expressed it, "Hear, feel or remember, I can't tell which. It seemed like all three,") what I had suggested to him.

The next day he wrote very hurriedly as follows:

Saturday.

Dear Cutten: I won't come Monday, I believe I don't need any more treatments, that they would be harmful. I'll explain. Yesterday I was seized with a mighty desire to drink. I yielded. As I drank my third beer I became sick as a horse. I could hear your voice far away saying, "You cannot drink, it will make you vomit, you can't raise your hand to your head, it is impossible. You don't want it, you can't take it. You can't smoke, tobacco tastes like wormwood. You will be ambitious, * * * ." Is this what you said? I seem to remember it all. Tell me if I had better be treated any more, or see if I remain in this state, this third self. Write to me and tell me what to do; I will come anytime you say if you think best.

Yours sincerely,

JOHN KINSEL.

P. S. The very thought of drink makes me heave. If this only lasts I will be a model man you may be sure. Do you think it will? J. K.

On June 2, again, he came and was hypnotized. From that time until November, a period of six months — he did not touch any kind of intoxicating liquors, but then he got a quart of whiskey and became intoxicated. Since that time he has had no desire, and where the smell of liquor used to engender a

great desire for a drink, now it has no effect, or if any, it causes a repugnance.

Mr. Kinsel very kindly allowed the writer to examine him while in the hypnotic condition, and some interesting results were obtained. When hypnotized, he was asked if this was the same state as his 'sleep'; he said that it was neither the same as his 'sleep' nor as his waking state, but a third state in which he could remember the events of both states. He was asked why he drank in the abnormal state, to which he replied: "When I was awake it seemed very wrong for me to drink, but when I went to sleep it not only seemed all right for me to do it, but the thing that I ought to do. It was the same way when these monthly spells came on (dipsomania)." We see here the change in the judgment, all scruples were removed, and it became a duty for him to drink where before it was a sin.

The hypnotic state was used by the writer to ascertain some facts concerning his case, but the statements were always verified, and it was found that most of the statements were correct; still he could not be trusted in everything that he said. An attempt was made to get a reproduction of the doggerel composed in the sophomore year, eight years previous, of which he could remember normally only twelve lines which had been told to him while he was awake. Not being familiar with the original, it was thought that he was showing a remarkable exaltation of memory, and in some respects he was; but it was also discovered that he could produce doggerel as well, and as rapidly in the hypnotic state as in his 'sleeping' state, and that he was interpolating much that did not belong in the original.

After finishing the doggerel, he said to the writer: "That's pretty bum poetry isn't it? You wouldn't hardly compare it to Homer." The writer replied that it was all right, when John made some further remarks. He was then asked if all that he had given was in the original, to which he replied, "Do you remember G— S—m—?" "Yes." "Well, he said, 'Gentlemen, -ah- you -ah- did not get that from the text, but from the context.' Well, I did not get it all from the text but from the context. I changed the meter, but I can give it to you in any other meter, or any other damned old poem; I feel like making

poetry this morning." The writer then said to him, "Make some poetry on our baby, any meter you like, and I will write it down." The last four lines are presented to show what he calls his best effort:

> **"And great big Cutten, noisy, strong, is happy when he hears the song**
> **That sings his baby into rest, asleep upon her mother's breast.**
> **And Cutten moves so quiet, still, you'd think he'd hypnotized his will;**
> **He fears he'll wake his little girl, and spoil the luster of his pearl."**

He remarked after he had finished, "That's pretty bum. You hadn't ought to give me a subject like that, that's too good a subject. You hadn't ought to ask a man to write doggerel poetry on a baby. I tried to do well on that." These verses were spoken just as fast as they could be taken down, and on other occasions the rhymes were not recorded, and he talked right along without stopping with about the same success. There are three characteristics shown very plainly in his doggerel regarding the boat-sail. The first is the relative memory of the normal and abnormal states while hypnotized. While in the hypnotic condition he remembered all of the poem which he did in the normal state, and weaved it in. He remembered some of the poem as he used to recite it in the abnormal state, but not all of it; much more, however, than he could remember in the normal state. The second characteristic is the power of spontaneous versification while in the hypnotic state, as being equal to that of the abnormal state. The material which he composed at the time, he tried at first to pass off as the original. In the third place, it shows the vulgar state of mind when he is hypnotized. He is fully as vulgar in the hypnotic state as in the abnormal state, and very much more so in both these than in the normal state.

The second poem, that on the baby, shows what he called doing the very best he could in the way of rhyming; but in this as in the other there is a change of meter. Here, different from his usual mood in an abnormal state, the friendly and flattering way in which he speaks of the writer, is quite noticeable. It will be remembered that in the abnormal state he was usually sullen, and unkind with everyone, here we have the direct

opposite. It shows the emotional extremes when not in the normal state.

Mr. Kinsel is at present teaching in a preparatory school. Apparently he is quite well, his eyes in the best condition they have been, and free from attacks of epilepsy, double personality, or dipsomania. Although the samples of his English given here while in the hypnotic condition, and just afterwards, were far from chaste, he has a remarkably fine appreciation of good English, and power of composition. He is also said to be a successful teacher.

Part II.

The statement was made in the beginning of Part I. that that part was wholly descriptive, and the terms there used were not intended to imply any theories. It remains for us now to discuss briefly a few points in the description. This discussion is not in the form of conclusions from the case, or theories in regard to the case, nor are such claimed for it; it is simply meant to be suggestive.

1. Attention is directed to the power of spontaneous versification of which some examples have been given. This abnormality — this genius — has shown itself in some quite famous persons, who have been otherwise quite normal. The following is quoted:[1]

"It seems highly probable that the extraordinary powers of impromptu versification shown by Theodore Hook and the late Mr. Serjeant Payne, were of the same intuitive kind as the faculty of musical improvisation. * * * I think it probable that if Mr. Hook or Mr. Payne had been asked the question, they would have said that their conscious mental participation in the performance was confined to that of a listener, and that they were wholly unable to say how it was produced, or to foresee the termination of a verse at the beginning of it."

Both in the cases quoted and in that of Mr. Kinsel, we see the exaltation of the normal faculties, in the power of attainment as well as in the rapidity of completion, so characteristic of abnormal conditions, *e. g.*, hyperæsthesia of the senses, and histrionic skill of hypnotics. Mr. Kinsel was the most spontane-

[1] Thomas Beckwith, 'Duplex Personality,' *Proc. Soc. Psy. Research*, VI., 84.

ous subject the writer has ever seen. Usually these subjects in the deeper stages are passive, answering at times unwillingly the questions or remarks addressed to them, but otherwise intent on sleep. This was not the case with John; he would volunteer remarks, make jokes, and laugh heartily on his own initiative.

2. If, as is probably true, the abnormal states were the equivalent of epileptic seizures, the dipsomaniacal attacks were the equivalent of the abnormal states, or better expressed, were another equivalent of the epileptic seizures, for dipsomania is usually associated with an epileptiform condition. This craving for alcohol was exhibited in true maniacal form; for twenty-seven days of the month he did not care anything about alcohol, during the remaining three days he could hardly be kept away from it. One other published case of double personality showed in the normal state a great craving for alcohol. In the case of Louis V., Mr. Meyer[1] says: "Though he had before the attack been a total abstainer, he now not only drank his own wine but stole the wine of other patients." The effects of alcohol appear to satisfy some abnormal nervous conditions in the morbid state. The fact that to the disordered judgment it seemed right for him to take alcohol at that time, means little more than that he felt the need, and he justified himself in this manner. Of course he did not recognize that it was simply a physical craving, for it had been woven into the diseased consciousness in the form of an ethical judgment. Two further abnormalities connected with his dipsomania and the hypnotic state, were the delay in action (he drank two glasses of beer without any discomfort) and the reappearance of the suggestions in conscious memory when they became active. Usually the subject who goes as deeply asleep as John did, when he takes the first glass of alcoholic beverage becomes nauseated at once, not knowing why, and not remembering any suggestion which had been given him. Here we see a closer bond as far as memory is concerned, between the normal state and hypnosis, than between the normal and the abnormal states; but this may be accounted for on the theory advanced by some,

[1] 'Multiplex Personality,' *Proc. Soc. Psy. Research*, IV., 496.

that when the post-hypnotic action in obedience to the command of the hypnotic state is carried out, there comes a temporary hypnotic condition during the time occupied in observing the command.

3. The phenomenon of repeating his awakening signal after he had awakened, without ability to stop, is interesting but not unique. In some experiments in automatic writing and other automatic movements, when the movements had been induced by repeated action, they would continue, after all initiative had been withdrawn, sometimes over one hundred times.[1]

4. The form of this case, as far as memory is concerned, is not unique, although usually the memories are entirely distinct. In the second state of Félida (there were three separate states), a case studied by Azam, the identical conditions of memory between the normal and abnormal states were found.

5. The predisposing cause of the abnormal states was undoubtedly epilepsy. The exciting cause was complex. One thing which contributed was the continuous study under unfavorable conditions; this put such a strain upon his mind that his brain and whole nervous system were affected. Another contributing exciting cause was his eyes. The cataracts directly did not affect the case to any appreciable extent, but indirectly they did. The cataracts were in the center of the lenses, and he endeavored to look around them. To accomplish this he walked along with his head down and eyes turned up, causing a heavy strain on the muscles of the eyes, and thereby putting himself in the position used by Braid and others in hypnotizing. The likeness of the abnormal state to the hypnotic trance would confirm us in placing this as a very important exciting cause, and in positing the case as closely allied to autohypnosis. Notice the similarity. First, he passed into the state as a hypnotic subject might do; at first in the form of a sleep, taking some time in getting well asleep. At these times he was only suggestible. As he became more and more accustomed to it, he went to sleep much quicker until he passed into the abnormal state instantaneously; he also became more spontaneous, not waiting for suggestions, but doing things on his own initiative.

[1] A. Binet, 'Alterations of Personality,' pp. 98 f.

Second, a loss of memory of what happened in the abnormal state, but full memory of both states when in the abnormal state. Third, his suggestibleness. Coupled with this is his dramatic skill under suggestion. Fourth, the exaltation of his normal powers while in this abnormal state; this has been referred to in another connection.

6. The chief interest in this and similar cases must center around the question of personality. There has been considerable written lately by certain psychologists, concerning a hypothetical entity called by various names, *e. g.*, 'Subliminal Self,' 'Subconscious Self,' 'Soul,' 'Other Self,' 'Second Personality,' 'Real Ego,' etc. The story is bruited abroad, that although the self and this mysterious individual of many names are keeping house together, they are not always congenial. According to some persons who claim to have seen her, she is sly, tricky, difficult to approach, murderous and thoroughly untrustworthy. Others affirm that she is very good, pure and refined, and that she will live after the death of the body and the self, *i. e.*, that she is the soul of man. If one were asked to decide between these two contradictory statements, and to say which one is correct, he might well say, "Both, it depends on the company which she keeps, it depends on the person with whom she lives." Unfortunately for those who desire to multiply mysteries, she does not exist, it is all gossip. A large amount of the material which has been presented on this subject lately, has been very pernicious in interfering with the integrity of the self. If there is more than one self there are not less than ten thousand selves residing in the one body, and dependent upon one brain and nervous system.

Binet[1] gives the distinguishing characteristics of selves as two in number, memory and character. Character implies so much that these two can be accepted as the dividing points. Let us look first at the connection between memory and personality. Can we say that we can be the same persons without self-conscious recognitive memory? Or is it necessary to remember all past experiences in order to be the same person? The ideal person holds a middle position between the two, for with no one person is either experience complete. In the life

[1] 'Alterations of Personality,' p. 345.

of everyone, there are certain mental experiences of whose validity we are in doubt when they come before us in memory; they may be dreams or they may be some of those strange experiences classed under what we call paramnesia. Is it memory, or is it imagination? The past alone holds the secret. Or it may be that it is impossible to tell whether or not we remember a certain experience as happening to us; and the question may come, in regard to some events, is it memory of the events as others have related them, or as they have really happened to us. Take the example of childhood experiences; our mothers have related the incidents so frequently, and we have retold them a number of times, until it is doubtful if we really remember them as experiences to the self. On the other hand, we must have some certain recognitive memory. What does it mean to be the same self without some recognitive memory? Yet to say that this must be continuous and complete is overstepping the mark on the other side.

We all recognize that one requisite of a good memory is the ability to forget well. The ideal person must forget eclectically. To remember every detail of life would so clog our minds as to render us unfit for the duties of life. We recognize this abnormality in some; the details are remembered so thoroughly that the important things are left out, and the individual is therefore unfitted for the responsible duties. So we swing from this extreme also; to be one and the same person it is not necessary to remember all of our past experiences.

But those who posit multiple personalities claim that it is the system of memories that makes the difference. A. B. remembers all the events of periods 1, 3, 5, 7, . . . of his life at a certain time 9; but at 10 he only remembers the events of periods 2, 4, 6, 8, . . . At 10, or any period of even numbers, he cannot remember any events of period 1 or any period of odd numbers; and at the odd periods the events of the even are equally shut out from him. This of course is the extreme case, and it is affirmed that in periods 1, 3, 5, 7, . . . he is a different person from what he is during periods 2, 4, 6, 8, . . .

Let us take a more familiar example. At nine o'clock in the evening I remember to mail a letter which my wife gave

me for that purpose this afternoon. I remembered about mailing it at four o'clock and six o'clock when I was not near a letter-box, but at five o'clock and seven o'clock when I passed the postoffice and the associations might be considered more favorable for remembering, the matter was not present in consciousness. Now, am I the same person which had possession of my anatomy at four o'clock and six o'clock, and a different person than the one which had charge at five and seven? But, you object, that is only a case of spontaneous memory; your thoughts were busy with other things at five and seven; it was not that you could not possibly remember it if you had been asked concerning it. That is very true, but after all, that difference is but one of degree. We would not have to imagine much to suppose that if my wife were riding past the postoffice with me, and should ask if I had mailed the letter, that for a time I could not remember and should reply, "What letter?' and not until I had thought for some time could I remember it. This is a very simple example of lapse of memory, yet it differs only in degree from those lapses that are supposed by some to separate personalities. Examples without number could be given of total lapses of memory concerning certain subjects, under certain conditions, *e. g.*, fatigue; under dissimilar conditions, *e. g.*, rest and recuperation, the memory would be perfect.

Let us take another example; similar ones can be found in the lives of all. A gentleman after dinner sits down in his easy chair before the fire; his work is finished for the day, business is banished from his mind, and he thinks of the days of boyhood and young manhood. He thinks of his school-days in the 'old red school house,' — how familiar they are to him! In thought he skips a few years of life as the preparatory school looms up before him, — how vivid it is. His freshman and senior years in college now take his attention, and from these he passes to the years in the law school. His memory has been concerned with only certain experiences, not continuous in time, but with years separating some, and nothing in between is recalled. During this time other memories have fled, and all events around him are unnoticed. He sees not the children as

they pass through the room, he hears not the call of his wife; but when she arouses him sufficiently to ask a question concerning the events of yesterday, he is unable to answer it, and affirms that he does not remember, although in an hour's time, or after he has been further aroused, he may be able to answer the question fully and correctly. Is he a different person while sitting here and remembering only certain things, or is he the same person? This example illustrates a further truth: memory after all is a matter of associations, if the right spring can be touched the experiences can be remembered. In some cases the trouble is in touching the right spring.

One further example from a late work.[1] A man drank quite heavily and went out driving with a friend. After a while the friend left him and he drove by a circuitous way back to the livery stable, stopped to allow another team to pass, delivered the horses, and went to a hotel some blocks away. Here he was aroused by a porter pounding on the side of a closet which he had entered. He remembered nothing of the past three hours. This was not a drunken sleep, for although he moved about apparently a trifle queer, he performed the complicated duties connected with the team in a competent manner, and went directly to the hotel. Was he a different person during these three hours? The memory of them was restored to him later by what is known as the hypnoid method.

Enough has been said to show what is wished — that memory, or lapse of memory (from whichever side we wish to view it), is a matter of degree, and depends on the control of the associations, and the coördination or harmony of the different elements of the personality. If necessary, a graded list could be gathered showing an unbroken line from the simplest lapse of memory to that which is supposed to separate personalities. Take four stages: (1) The common experience given above regarding the mailing of the letter. (2) The case given above of the abnormal state of the man who drank, but whose memory was afterwards restored. (3) The case of John Kinsel, who when in one state entirely forgot the events of the other state; but when in the other state remembered the events of

[1] 'Psycho-pathology.'—Boris Sidis.

both states. (4) Common cases of 'double personality' where the memories of the two states are apparently entirely separated. Between these four we can fill in cases to make a gradual scale. Where is the line to be drawn between the amnesia of one person, and the distinction between two persons? How much would a person have to forget, and remember again under other circumstances, to become two persons? As has been suggested,[1] we have been too willing to confuse amnesia with unconsciousness or other consciousness, instead of calling it what it really is, simply amnesia.

In dealing with the factor of character we have very much the same problem as we had concerning the memory, *i. e.*, that of embracing separate and distinct states in one personality. It is claimed that in 'double personality' there is usually an entirely different character. Let us look at our characters after the analogy of chemical compounds, made up of varying quantities of certain identical or different elements. A few molecules more or less change the nature of the whole compound; the proportion between two or three elements may be changed only in one atom or molecule in a single element, and yet it makes the difference between a health-producing potion and a poison. Very little change in one element of the character causes such a difference in proportion that the whole character is altered from a brilliant, joyful, buoyant one, to a dull, morose, depressed one. Thus in laying emphasis on the great change of character in people, let us realize that in reality it may only be small and apparently insignificant after all.

The secret of character is control. A person has a real, true character only as he has real control, and he lacks this character as he lacks control. We found with Mr. Kinsel that his surliness in the secondary state was largely a matter of control. In the abnormal state he was particularly disagreeable to those whom he disliked normally, but who never knew it because then he was able to control himself. With other cases of 'double personality' there may seem to be a great change of character, but it could probably be traced to the lack of control in some one element of life.

[1] 'Psycho-pathology.'—Boris Sidis.

Let us present two examples, both of which apply to the memory as well as to the character. A man is insulted and gets angry; contrary to his usual actions he talks loudly, calls vile names, swings his arms, and makes threatening gestures. His friends restrain him and take him away. The next day he is entirely ignorant of the details of the encounter; he denies that he swung his arms or talked loudly. Here is a lapse of both character and memory, but is the man a different person therefore, or is he the same person in a different mood?

The other example is more closely allied to 'double personality'; it is that of dreams. A very small proportion of our dreams are remembered for longer than a minute after waking; then they are gone beyond recall, and probably the great mass of our dreams are not remembered at all. For the time that we do remember them, and in those that we remember more fully, do we not recognize that WE dream so and so, and not that someone else has dreamed them and communicated them to us? We recognize ourselves in our dreams, the experience happened to us. Our characters are entirely changed in dreams; we do things that we could not normally allow ourselves to do. Here, as is true with all character, it is a matter of control; our characters are less because we have less control, less will. Sometimes the dreams are forgotten and we are unable to recall them, but on successive nights the dreams may be taken up and continued so as to make a systematized experience, as in the case of Mr. Kinsel, yet we may be unable to recall the details, only remembering that the dreams are continued. In all this we do not recognize another personality; even if memory and character fail us, we still recognize the same personality as in the normal state.

We have found memory to be a matter of degree, ranging in a graded scale from simple amnesia to that separation of memories common in 'double personality.' Even here we do not admit a complete separation of memories, but only an apparent one. Certain states of one condition greatly influence the states of the other condition, and memory in a small degree is undoubtedly present. Some time ago it was thought that the deeper stages of hypnosis were entirely shut off from the nor-

mal states as far as memory was concerned, but now it is recognized that the memory although weak is not entirely absent; and this we would posit for all cases of 'double personality' whether artificially induced or not. We have found character dependent on the amount of control, and therefore also a matter of degree; adding these distinguishing characteristics together, we would thus suggest that personality is a matter of degree. It is not a question then of the number of personalities, but of the degree of personality according to the amount of control and harmony. Therefore the term 'double' or 'multiple' personality has no real meaning, but instead we must state the particular stage of personality, ranging from complete or perfect personality to that of absence of personality, the extreme stages being purely hypothetical, and not found in real life. The very essence of personality is unity, and thus the term 'double personality' is a paradox; leave out unity and you destroy personality, and in proportion as unity is destroyed, personality is annihilated, not multiplied.

But a real objection enters here. One says, "I agree that personality is a matter of degree, that as memory loses and character loses, so personality loses; as the life is cut short in these respects, so the personality is dwarfed. Grant this, but what will you do with the separated portions? This is the whole question. When they are pieced together do they not make another personality in their systematized form?" No, we hold to our original suggestion. We doubt the complete change of character, at most it is only partial; and we also doubt that these memories are completely cut off. There is some disassociation, but we would warn again against the confusion of amnesia with other consciousness. It is but an exaggeration of the common working of association. The mention of one book leads us to the consideration of one line of topics, while another name would lead us in the opposite direction. These would never cross, one would never lead to the other. If a common association could be obtained, the two lines of thought could be merged. We find this well illustrated in hypnosis; in the deeper stages there is little or no memory when the subject awakes. Experiments of this kind have been tried: let the

subject be awakened when he is washing his hands, or performing some act that can be continued, and the hypnotic experiences are remembered. Here the common association is found, and instead of two personalities we find only one; had not this association been found there would still be only one personality, dwarfed by simple amnesia. Successfully have the amnesic experiences been recalled by hypnotic and allied methods, and no distinct personalities have been found, but the same personality suffering from amnesia, a certain group of facts awaiting the proper stimuli to be aroused. We then would say in answer to the objection, we have no second personality, but the same personality which, like all other persons, is able to recall certain events under certain stimuli and associations, and when other stimuli and associations act, then other events come to mind; a stimulus or association common to both trains of associations would arouse both streams of thought of this one person.

We would suggest also that what sometimes seems like another personality is the mechanical action of the physical processes.

THE PLACE OF PLEASURE AND PAIN IN THE FUNCTIONAL PSYCHOLOGY.[1]

BY DR. WARNER FITE.

In Professor James' chapter on 'Instinct' we are told that all human activity is the outcome of preformed instincts; in the chapter on 'Will'[2] we learn that the operation of instincts may be modified by experiences of pleasure and pain. The question is then suggested, can pleasure and pain be regarded as modifiers in a system which refers activity to instinct? And this leads to the more general question, What is the place of pleasure and pain in a functional psychology? These questions will be the subject of the following discussion.

I.

As a basis for discussion it will be necessary first to make an outline sketch of the functional system. The functional view, as I shall call it, is represented by the tendencies common, say, to James, Stout and Dewey,[3] and is to be contrasted with the structural psychology of the association school. It is the view which is sometimes called 'pragmatism.' The raw material for a functional system may be found in James' chapters on 'Emotion,' 'Instinct' and 'Will'—more particularly in the chapter on 'Instinct.' Here it is shown that human instincts are far more numerous than had been commonly supposed, and, indeed, that so many of our activities have their origin in preformed tendencies as to warrant the supposition that this is the origin of all. The development of our activity is then as a whole nothing but a process of modification of the original instincts through inter-

[1] Read at a meeting of the Western Branch of the American Psychological Association, at the University of Chicago, December 6, 1902.

[2] 'Principles of Psychology,' Vol. II., p. 549.

[3] See Stout's 'Analytic Psychology'; Dewey's papers on 'Theory of Emotion,' PSYCHOLOGICAL REVIEW, Vol. I., No. 6; Vol. II., No. 1; 'The Reflex Arc Concept in Psychology,' PSYCHOLOGICAL REVIEW, Vol. III., No. 4; also his 'Study of Ethics, A Syllabus.'

action, or, in Professor Dewey's words, all activity is originally impulsive. The chapter on Emotion then deals with a special aspect of instinct. The emotion is the consciousness of an instinctive reaction; but the emotional reaction as such ends, so to speak, with the body of the agent, whereas the specifically instinctive reaction goes further and deals with an external object. The chapter on 'Will' shows that voluntary choice, or will, merely decides which of a plurality of competing instincts is to be allowed to prevail, or what is to be the nature of the compromise between them. We never do anything absolutely new; all that we do is to direct or modify instincts already formed.

Here we have the substance of the functional system. But to make our outline complete, two further considerations are needed. The first of these relates to the factor of conflict. Professor James makes it clear enough that the instincts we are talking about work not alone but in company — and thus either in harmony or conflict — but he fails to consider the bearing of conflict upon the distinction between instinct and emotion. Why is it that some instincts end with the agent's body, while others go beyond? Evidently because, after an instinct has set out to deal with an object, it has been checked half way. But what could have checked it? Evidently, if you accept the functional view, nothing but another instinct. And so the fundamental distinction between instinct and emotion is this: every instinct sets out to deal with an object; an instinct in the narrower sense reaches its original goal unhindered; if it is checked half way by another it becomes an emotional reaction and as such the activity is confined to the body of the agent. To illustrate — the instinct to strike another is set in motion by an insult, but a second instinct — you may call it self-respect or it may be fear — gets in the way and the result is nothing more than a clenching of the fist, etc. The obstacle may be overcome, and the first instinct may succeed in attaining its object, but in the act of doing so the emotion, *i. e.*, the anger, disappears.

The other consideration is this: It is part of the functional view to hold that without conflict there is no consciousness. If this be true, it is clear, on the basis of the foregoing, that purely instinctive reactions do not come to consciousness at all. If the

instinct works itself out wholly without opposition, the agent remains unaware of his own action. If the impulse to strike my fellow-man meets with no more opposition from the rest of my nature than the impulse to brush away a fly, I shall be as unconscious of the former as I frequently am of the latter. It is only as an instinct is opposed by another and becomes emotional that it becomes a part of consciousness. In other words, confining our attention for the moment to the process of conation, consciousness begins with emotion. But it also ends with emotion. As we have just seen, the voluntary act is, in the functional view, the final adjustment of competing instincts; and as such it marks the end of both consciousness and emotion. Accordingly, taking the conative process as a whole, the functional view may be summarized as follows: Every conative consciousness begins with a conflict between instinctive reactions; it continues throughout the conflict, and ends with an adjustment of the conflict in the form of voluntary choice.

We have so far confined our attention to conation. It will be unnecessary for our purpose to define the functional view of cognition,[1] except to note the parallel, in the functional scheme, between emotion and reflection. If all consciousness is occasioned by conflict, then all cognitive consciousness, including even sensation, must be in some sense a process of reflection—a balancing of alternative possibilities. Hence, in reflection we have the cognitive parallel to emotion. And, carrying out the scheme, the following will be the functional view of the conscious act as a whole; every process of consciousness begins with a conflict, which is both emotional and reflective, and ends with a coördination, which is both voluntary choice and conviction.

II.

Such, it seems to me, is the scheme of relations presupposed in Professor James' three chapters. Now, after we have worked out these consequences, we are surprised to learn in the chapter on 'Will' that action may be modified by pleasure and pain. Professor James admits that pleasure and pain cannot initiate

[1] The substance of the functional view of cognition is given in James' chapter on 'Reasoning.'

action—that is to say, the infant cannot be influenced by pleasure and pain until he has once performed an act and noted the hedonic character of the results; hence, if he is to perform it in the first instance, he must be provided with the appropriate instinct. But the question still remains, How (upon a functional basis) can pleasure and pain even *modify* action? Where is the source of their power? They are neither instincts in themselves, nor are they part of that mysterious *fiat* which, according to Professor James, may tip the balance between competing instincts. Apparently, in a view which makes all activity impulsive and conceives of mind as a system of activities, they have no motive power. If we give them the character of positive factors in the mental complex, we depart from the functional view and adopt the standpoint of the associational or structural psychology which regards the mind as a *quasi*-chemical compound of substantive elements, among which is the element of pleasure-pain.

Nevertheless, whatever theory of psychology you adopt, pleasure and pain are facts of our psychical life. The question remains then, What is their position in the psychical life, if you accept the functional theory?

In seeking an answer to this question, we must use the functional *method*. From the functional standpoint, mind is a system of activities. Now, speaking empirically, some mental phenomena are more obviously activities than others; reasoning and choice are more obviously active than sensation and habit. The former are, therefore, for the functional psychologist, more typically the real thing. The functional method is, then, to begin with an analysis of the more obviously active phenomena of mental life and, regarding these as typical and real, to use the analysis thus obtained as a basis for the explanation of mental life as a whole. Applying the method to the case of pleasure and pain, it means that we first study the pleasures and pains of activity, in the narrower and more obvious sense, and then apply the resulting analysis to all the other forms of pleasure and pain.

Now, among the conditions determining the pleasures and pains of activity the most significant for our purpose is the

before-mentioned condition of conflict. After calling conflict a condition of consciousness as such, it may seem a truism to repeat that it is a condition of pleasure and pain. But in a functional interpretation of pleasure and pain, the implications of conflict are in need of special emphasis. In the more common view, conflict belongs only to pain, pleasure presupposing its absence; and the rather striking coincidence of pleasurable excitement and struggle is treated as an unimportant variation due to special circumstances. The point to be urged here is that, if you take the functional view, struggle and conflict must be regarded as essential to both pain and pleasure; for with regard to the pleasures and pains of activity, you find that without conflict there is no feeling whatever. Consider, for example, the pleasures and pains of a game, let it be tennis or chess.[1] All the feeling lies between two points — between that at which your opponent becomes strong enough to offer appreciable resistance and that at which he has become so strong that any effort on your part is futile. Outside of these limits there is no struggle; if your opponent is too weak, struggle is unnecessary; if he is too strong, struggle is useless. It may be objected, indeed, that both of the excluded cases are cases of pain; if the opponent is too weak you are bored, if too strong you are disheartened. But upon examination you will find that this really is not the case. We are never chagrined at being defeated by an invincible opponent. Rather, in recognizing him to be invincible, we admit that we are not in his class; we cease to make any pretensions to an efficiency comparable with his, and cease to regard the matter of defeat or victory as having any importance. Nor are we necessarily bored by a too feeble antagonist. It is no hardship when you are comfortably seated enjoying your after-dinner cigar to play a game of checkers with a child. The attention required is so insignificant that while playing your part of the game, you may still enjoy the luxury of your own thoughts. It is when the activity positively

[1] The process of playing a game, assuming it to be played earnestly, furnishes a comprehensive illustration of a mental activity. Wherever we are active there is a struggle and an attempt to get the better of an opposing force, which may be the resistance offered by our neighbor, by material conditions, or by the inertia of our own habits.

interferes with some more engrossing object — when, for example, you are eager for a stiff game of checkers or tennis, or when you are impatient to take up your work, or for that matter to take a nap — it is then that the feeble opponent becomes a nuisance. But here we have again a condition of conflict, only now it is not a conflict between factors within the game, but between the whole matter of the game and something outside. Accordingly, from the functional standpoint, we have a triple parallelism between consciousness, conflict and pleasure-pain. Not only is conflict a condition of consciousness, but it is specially a condition of pleasure-pain.[1]

With this point granted, the distinction between pleasure and pain becomes relatively obvious; pleasure is succeeding, pain is failing in the process of resolving a conflict. I use the participles 'succeeding' and 'failing' because I wish again to emphasize the condition of conflict. Pleasure is not success, pain is not failure. In other words, neither is a substantive mental state, but only a transient phase of a process. When we have brought the process to an end in a definitive success or failure, the whole matter is dismissed from the mind and there is no more feeling of either kind. If we continue to rejoice over victory, it is because in our imagination the struggle is still on — in other words, we have to an extent ignored the certain fact of victory and put ourselves back into the standpoint from

[1] Upon rereading Stout's chapter on 'Pleasure and Pain' in the 'Analytic Psychology' I find that I have followed his analysis more closely than I was aware. I wish, therefore, to call special attention to the dependence of pleasure upon conflict, since Stout, though holding that conflict is essential to all feeling, seems also disposed to compromise with those who attribute pleasure to the absence of conflict, by assigning less conflict to pleasure than to pain. According to him pleasure is the 'smooth,' 'prosperous' and 'uninterrupted' progress toward attainment (pp. 271, 287). This suggests Spiller's assignment of pain to 'opposed disturbances,' pleasure to 'semi-opposed.' My point is, the fiercer the conflict the more intense the pleasure. This is supported, it seems to me, both by the logic of the functional view and by observation of the more active pleasures. If you connect pleasure with consciousness of activity, then the fiercer the conflict the more intense will be the consciousness, the feeling, and — if the feeling be pleasurable — the pleasure. And as a matter of fact there is certainly a more intense pleasure in removing a stubborn obstacle than a pliant one. Pleasure depends not merely upon the prosperity of our undertakings, but upon the size of them, as estimated by the difficulties presented.

which it was still in doubt; it is only from this standpoint that we can feel pleasure. If, again, we continue to feel the bitterness of defeat, it is because the struggle is not really ended. We have not yet accepted the fact of defeat: some hope impels us to keep up the contest and fight it out to the bitter end.

It is to be noted, however, that the estimation of success or failure does not refer necessarily to the external marks of victory or defeat. One may enjoy a game in which one is being badly beaten; or a brilliant victory, as estimated by the score, may be quite unsatisfactory for the agent in question. He may feel that he has virtually failed — that is, that he has failed to accomplish what he set out to do. The estimation of succeeding and failing proceeds always from the standpoint of the agent and of the stage reached in his self-development. From this standpoint, succeeding is progress, failing is retrogression. If, in playing a game of billiards or tennis, I feel that I am acquiring a greater precision in the estimation of angles and distances and a greater control over my muscles — if, in a word, I feel that I am making progress in the solution of the problem before me — then the process is pleasurable, whatever the objective results. Conversely, if my thoughts refuse to flow as quickly as before, and my muscles to respond as accurately — if I feel that I am less proficient in dealing with a given situation — then, even though the score is clearly in my favor, the process is unpleasant, or painful.

This suggests to us a general definition of the conflict to be resolved. While succeeding in certain activities I may be failing in others, and the pleasure attendant upon success in a game may be dimmed by the consciousness of failure in the larger matters of family and professional interests; so that the life problem as a whole shows no progress toward solution and my feeling as a whole is that of unhappiness. The question then arises, What is it that sets the life problem, causes the conflict and determines our happiness or unhappiness as a whole? There are various ways of stating and answering this question. A convenient method is to conceive of the conflict as equivalent to a disturbance of equilibrium;[1] pain and pleasure would then

[1] See Marshall, 'Pain, Pleasure and Æsthetics,' p. 221 ff.; Spencer, 'Data of Ethics,' § 36.

be the earlier and later phases of the progress from first disturbance to final restoration of equilibrium. But the question remains, What produces the disturbance? Does it arise from within or without? The functional view emphasizes the internal factor. According to this view, mind is an activity; psychical development is the issue of inner capacity into activity. Where an equilibrium has been reached, it may, indeed, be disturbed by such a narrowing of external opportunity as to threaten a backward movement in the matter of capacities already realized, but it is certain to be disturbed by the coming to consciousness of further capacities which call for further realization. Briefly, then, the functional view is teleological. The conflict is brought about by the increasing demands of the life purpose as opposed to conditions that stand in the way of its realization; and the resolution of the conflict means that the obstructions are either removed or discovered to be definitively insurmountable. Pleasure is then the consciousness of removing the obstruction, pain the consciousness of failing to remove it, but the consciousness that it is removed or definitively irremovable is neither pleasure nor pain. In other words, pleasure is a succeeding, pain a failing, from the standpoint of a teleological life process, but definitive success or failure produces as such no feeling whatever.

As an illustration of the pleasure-pain process, let us notice briefly the following series, which is the basis of an argument between Brentano and Stout: sorrow — longing after an absent good — hope, that it may come into our possession — desire to procure it — courage to make the attempt — voluntary determination which issues in action. This series may be taken to illustrate the transition, through pain and pleasure, from a disturbed equilibrium to an equilibrium restored through a satisfactory solution of the problem. And all the members of the series, with the possible exception of voluntary determination (according as we conceive the determination as in process or as accomplished), presuppose a condition of conflict. Supposing the series to be reversed, it would be true even of sorrow; for sorrow means that we have not accepted the situation as final. And this holds even of those cases where sorrow is due to loss by death, and where, it would seem, the

irrevocable nature of the loss could not be contested. The sorrowing person still protests and struggles against his fate, refusing to believe it possible that a calamity of such proportions should be an accomplished fact. When he finally arrives at the matter-of-fact view that the loss *is* irrevocable, and that no protest on his part will make it less so, sorrow is succeeded by resignation, and with resignation there comes an end of suffering, if not, indeed, of memory of the object lost. So too, on the other side, the joy of final success lasts only while the dread possibility of failure is still in some degree present to the mind. When success is so assured as to be self-evident and, so to speak, axiomatic, it becomes a matter of course and passes out of consciousness. Thus we find that it is not the possession of wealth that confers happiness, but the getting possession of it after a period of poverty, and not health that we really enjoy, but convalescence. And, finally, the man who enjoys to the full the sense of mere living is he who has just narrowly escaped death.

III.

The object of the foregoing is simply to point out the implications of the functional standpoint and method, without bringing into question the final validity of the functional hypothesis. The exclusive validity of the functional view would depend upon the possibility of extending our formulation of the pleasures and pains of activity to cover the relatively passive pleasures and pains of sense; and the possibility of such application would be a question of physiological detail. The pleasures of activity, as commonly recognized, are those connected with the gross activities of the organism; if the sense-pleasures represent an activity, *i. e.*, the overcoming of a difficulty, the factors by whose conflict the difficulty is created must be sought in an analysis of the physiological process, since they are not clearly distinguished in introspection. But the presence of such conflicts is clearly suggested. Our common feeling, or mood, shows constant alternations between rest and unrest, satisfaction and need, problems solved and to be solved. And it is clear that these alternations are not purely periodic, like the alternation of hunger and satiety, but that some at least are due to the

presence of new demands incident to the growth of the organism. It may even be doubted whether any return to equilibrium leaves the organism in the same condition as before the equilibrium was disturbed. As a result, we find that nothing is invariably pleasant.[1] The pleasantness of a given object depends upon the stage of appetite at which the object is secured; and in all cases it is the getting satisfied that is pleasant, rather than the being satisfied. This is true of the pleasures which are apparently the most passive, such as the pleasure of a warm bath. It is not the warmth, but the getting warm, that is pleasant; when the point of adaptation is reached between the temperature of the body and that of the bath, the bath is no longer distinctly pleasant. It is, indeed, a sufficiently obvious fact, that the pleasures and pains of sense are conditioned by the existing state of the organism; it remains for the functional psychology to show, by a reference to physiological detail, that the existing state is a state of conflict between organized habits and the further demands of organic growth.

Among the remoter consequences of the functional view I shall mention the following two: first, its bearing upon the experimental investigation of pleasure and pain, and, secondly, its consequence for ethics. (1) If pleasure is merely a transitory phase of a process, it is evident that we must take into consideration the stage of activity at which an object is felt to be pleasant or painful, as well as the nature of the object presented. Most of our experimental investigation, in other subjects as well as in emotion, rests upon the theory of structural elements as a working-basis. This is rather clearly illustrated in what Titchener calls the 'method of impression' as applied to the affective qualities. Here the attempt is made to construct a scale of pleasantness among, say, colors, by having the subject decide

[1] It is true, however, that for human beings, some objects, such as red-hot iron brought in contact with the skin, are invariably painful (though, perhaps, not always painful to the same degree). It may be possible to find a functional explanation of the fact. The invariably painful objects are related, apparently, to needs long since established in all human organisms. The absence of the object produces no pleasure because such absence is presupposed in the existing scheme of life, but its presence introduces a general derangement and thus gives pain. Pleasure, on the other hand, presupposes that the need of the object is in actual process of development.

which of a pair of colors presented is pleasanter; and the assumption underlying the method is that a given pleasure-pain quality is inherent in a given sensation-quality, that any failure of the pleasure or pain to manifest itself will be due not to any want of pleasantness in the object *per se*, but to the presence of other pleasures and pains more intense, and that the effect of such disturbing elements will be neutralized in a number of trials. It is clear, however, that from the functional standpoint, the method would be impracticable, or at least rather blind. We should not expect any sensation, or object, to have a constant affective quality, and we might expect to wander indefinitely through the maze of varying conditions without lighting upon the determining factors. From this standpoint the significant conditions would be those of the general culture of the subject, as well as his condition immediately preceding the experiment. We should expect to receive from different persons widely varying judgments and from the same person judgments varying somewhat according to the needs which were momentarily active. And it is possible that at no time would a single color be pleasant *per se*. The standpoint may perhaps be better illustrated in the realm of tones. We know that the pleasantness or unpleasantness of given combinations of tones — as contained in a given piece of music — varies with different persons, with the same person from time to time, and with different stages of musical culture; what is harmonious to one is discordant to another and perhaps flat and tasteless to a third. A functional psychology would then give up the notion of assigning harmony or discord to given combinations and endeavor to relate the combinations of tones in a genetic series corresponding to the development of musical taste.

(2) The ethical consequence of the functional view is to render it inconceivable that we should choose pleasure as an end, and hence, impossible to set up pleasure as the end to be sought. According to the functional view, the motive power of action is instinct, and it is the object implied in the instinct which constitutes the end. In this system there is no room for the motive of pleasure. Pleasure is simply an abstracted phase of the process of satisfaction — an indication that the object is

being attained in the presence of a difficulty. In other words, pleasure is not an active force or function, but a mere phenomenon. The desire for pleasure, if conceivable at all, would be irreconcilable with the desire for the object; for since pleasure exists only while success is deferred, pleasure as such could be prolonged only by sacrificing the object originally sought.

DISCUSSION.

MORAL FEELING AS A BASIS OF THE PSYCHOLOGY OF MORALS.

It is common to speak of such sentiments as sympathy, reverence, affection, etc., as moral feelings. If we consider the basis of this use of the term moral, we shall find it to be either the belief that these feelings tend to promote some end regarded as moral, or else the presence of some element of feeling associated intimately with all feelings called moral. From a strictly psychological point of view the former reason does not serve, of itself, to make feelings moral at all. On the latter ground we may rightly speak of moral feelings just as we speak of angry feelings, or feelings of fear. No one ever had, I suppose, a feeling of pure anger, or of pure fear, or of pure morality, but the abstractions may be regarded as elements of an emotional state. If the psychology of religious sentiment is to be balanced by a psychology of moral sentiment, it should be possible to identify (not of course fully to describe) the moral sentiment *per se*. This, so far as I know, has not been done.

Professor Leuba's article on the psycho-physiology of the moral imperative, in the *American Journal of Psychology*, Vol. VIII., No. 4, has been of much service to me in the study of this subject; but it seems to me that the conclusion he arrives at is unsatisfactory. His thesis is: The moral imperative is the psychic correlate of a reflective, cerebro-spinal, ideo-motor process, the efferent end of which is organized into motor tracts coördinated for specific action. The chief points are: that the process is reflective, not reflex; has no felt reference to the sympathetic system, and ends in a 'clear-cut coördinated motor conclusion, prompting to action.' That is, the idea of the action tends to fulfill itself, if it be only in speech, without effort or delay.

To meet the obvious objection that this description applies quite well to logical activity, Professor Leuba adds that only in the case of the moral intelligence is the idea that of an action that would modify the 'experiencer's relation to some existence.' As, however, the motor conclusion of the moral process may, it is admitted, affect the speech organs only — an effect realized also in a purely logical process — it appears that the distinction between moral and logical senti-

ment is reduced to a difference between the relations found within the ideal content accompanying the feelings. This distinction clearly will not serve for psychological purposes.

The moral imperative exists, Kant tells us, because of the opposition between our rational and sensible natures. Though Professor Leuba emphasizes the contrast between the moral imperative and all desires and cravings — a distinction which applies also to the sense of logical necessity — he fails to insist that this contrast must be *felt as a part* of the moral imperative if that is to have a distinctive character *per se*. It is the *sense of* that contrast that makes the moral claim not necessary, but imperative; not 'must,' but 'ought'; while the moral is distinguished from other imperatives by the clearness and coldness of its demand. It is never heard, Professor Leuba tells us, in the din of passion. On the contrary, surely it is there that it is primarily present. It is 'a rod to check the erring and reprove.' It is *not* calm, but it 'calms the weary strife.'

Though there are many feelings called moral in which a sense of actual restraint or imperativeness is not present, the classic representations in art and philosophy of the moral sentiment portray it as preëminently restraining, imperative. If the term moral is really one, it must be so by virtue of some one feeling which is at the bottom of all its uses. I wish to identify for psychological purposes a certain sense of restraint as generally receiving in and for itself the name of moral sentiment; and to indicate, further, how all uses of the term moral can be explained through association with this sentiment, getting their moral character from a reflection or memory of the moment of restraint and conflict. This identification should serve as a basis for a consistent psychology of morals, at present lacking.

This restricted use of the term moral corresponds with the term conscience in the narrowest sense. The universality of conscience is indicated by the common description of it as the law, as the voice of reason or of God. To say that it refers to an ideal of character (Wundt) or to an ideal self (Bosanquet) narrows it unduly. I wish to propose that in the first instance it is essentially nothing but the sense of a restraint of emotional by intellectual activity. If I were to adopt Professor Leuba's physiology I should say that it is the psychical correlate of the restraint of muscular activity, associated with the sympathetic system, by cerebral activity (perhaps also by muscular movements associated with the cerebral activity and antagonistic to the muscular activity first mentioned). This account would rest on the assumption that the association and awakening of cerebral activity on

a large scale must materially diminish the energy available for those movements associated with the sympathetic system. As to the term intellectual I shall here again quote Professor Leuba. "Observations made indicate that even the mental activities which feel most purely intellectual exercise a measurable influence on blood circulation and visceral activity. But the experiencer does not recognize an effective tone, an emotion. The undistinguished bodily echo of the felt intellectual process does not concern us here. Moreover, as introspective observation declares, the moral imperative is the purer, the more exclusively intellectual it feels." (I should here say, the more exclusively intellectual the *restraint* is felt to be.) Provided the distinction thus drawn between intellectual and emotional activities will aid us in the identification of the moral sentiment, its precise physiological accuracy may be left unquestioned for the present.

The universality of conscience must be distinguished from mere generality. We may speak of sympathy, for example, as a universal sentiment, meaning thereby only that all men, without an observed exception, possess it. This is not the kind of universality we apply to the moral judgment; for some men appear incapable of it. So we regard a logical judgment and, I think, an æsthetic judgment as universal, though some men, in other respects estimable, fail to recognize it. We regard the moral demand as universal, because it rests on the nature of man. Kant says we value men because they are rational, and not merely sensible, that is, part of nature. Criticism of this way of expressing it overlooks Kant's insistence on the imperative character of rationality due to man's participation in a nature both sensible and rational. A man who lacks sympathy is a hard man; but he that lacks conscience, or rather the capacity for subjection to moral restraint, is a beast or a god, and not a man at all. In like manner we demand the recognition of logical necessity from all *men*. But it is in the case of moral restraint that universality appears in most immediate relation to action, and is most impressive.

This association of universality with rationality or intellectuality is endorsed by common usage; the emotional impulse with its bodily reference is recognized as individual. Where no flaw can be detected in a plea for any moral judgment we regard it as weakened if we can detect in him that proposes it any emotion, religious, social or directly selfish, that seems to be the spring and source of his demand.

Supposing this attempted distinction between intellectual and emotional activity to be sufficiently clear, I shall now give an account of what I think may be taken as a typical instance of moral restraint.

Suppose A. to be angry with B., and that he is about to express his sentiments; if he is checked by fear we do not call his emotion a moral one in itself. Suppose a sense of B.'s weakness strikes compassion to the heart of A. and thus his action is checked. There is a sense in which we may call this restraint moral, but if my analysis so far has been correct, this use of the term moral must be secondary, derived. Suppose A. realizes that he is angry and that his wrath can fit in with no general idea or system of things or of conduct; then the restraint may be purely moral. He places the idea of his present conduct in relation to a system of ideas and seeks in vain for some universal judgment under which it may be placed. Thus *thinking*, his hand falls or his face relaxes, and the threatening words are not spoken. Mere cerebration may be regarded as absorbing his power. Suppose that the succeeding action is merely ideo-motor. Then, if A. carries over to that act the memory of the former restraint, the act itself may be dubbed moral; but the application of this term is secondary. If some emotion, for example, if affection terminates the restraint in the direction opposed to the original impulse, that emotion, though not in itself moral, may take on, because of the memory of the state of restraint, a moral character.

There may be present in the act succeeding the moral restraint a deep sense of the fact that that act is thoroughly in accordance with the widest possible point of view. This sense of completeness, however, is rather æsthetic than moral. It is conceivable that such a sentiment may be present without any antecedent moral restraint. It is only by virtue of such antecedent moral restraint that this sense of perfection, of completeness, can be moral. Thus, moral enthusiasm belongs only to an imperfect individual.

Certain emotions that are seen consistently to tend towards the awakening, the support, or the final effectiveness of the intellectual restraint in a direction opposed to the original impulse may be and are classed as moral by virtue of this repeated association. This association of the moral sentiment may be carried still further in man's efforts to build up a system of thought which may serve to restrain him in critical moments. The whole system is described as moral. The ideal, which, in itself, as in the case of the great systems of Spinoza and Aristotle, may be æsthetical and logical, and even avowedly non-moral, may, because of this association, be felt as moral. All religious ideals are thus moral. These æsthetic and logical associations again strengthen the moral sentiment. For it is obvious that, like every other feeling, the moral restraint may be regarded not only as

the result of conditions, but as being also active, as the restraining power.

In classifying the feelings that are called moral, this theory requires a distinction between those feelings that tend to call up intellectual restraint and those that tend to *end* the restraint in the direction that is in harmony with the intellectual activity. In case of pure moral activity the former class includes only the moral restraint itself seen from its effective side. Duty or conscience is the calling up of the intellectual activity, or the cause of that calling up, or its effect, just as anger is the excitement of certain bodily actions, or the bodily activity itself, or its effect, according to the way in which the matter is approached.

Reverence and obedience, however, are feelings which are closely related to duty. The distinction seems to be as follows: The intellectual activity and the reference to it, must be colored by the nature of the unconditioned basis of the individual's thinking. That such a basis is necessary for rational activity hardly needs to be said. That the character of that basis depends on the nature of the individual, and will color therefore the restraint as well as the thinking which restrains, seems obvious. Where that basis is practical, that is, rests on the perception of the *necessity of acting according to some idea*, then we have duty at its purest. Where the basis depends on an *æsthetic satisfaction*, as in the case of many religious natures, the emotion may best be called reverence. Where the basis is anthropomorphic, whether social or religious, the influence is obedience.

Mere self-control differs from a sense of duty in that the former usually implies a feeling that there is associated with the intellectual restraint some emotion which has associations non-moral or immoral. It is implied in duty; and prudence therefore has a moral character through its relation to self-control as well as through its connection with the objective ideal. Mere prudential restraint however *always* merges in an emotion that is felt as bodily, and as individual; for example, self-approval, love of others, fear, etc.

These remarks indicate some of the ways in which I believe this identification of the primitive moral sentiment will serve to assist in the classification of moral characteristics from the psychological point of view. It may aid also the genetic study of moral consciousness. Briefly to summarize my position: The essential or primitive moral sentiment is that which characterizes the restraint of an emotional tendency to act by a 'purely' intellectual activity whose ideal aspect is that of a general and more or less systematized view of real-

ity; whose emotional concomitants, also, are not distinguishable or individual, have no bodily localization. Every proper use of the term moral is traceable to association with a restraint of this character, and the validity of the use may be tested by the closeness and genuineness of this connection.

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PROFESSOR STRONG ON THE RELATION BETWEEN THE MIND AND THE BODY.

In common with others I have been interested in Professor Strong's work just published, 'Why the Mind Has a Body.' The book is an attempt to solve that old but fascinating problem, 'The relation of the mind to the body.' The author as the result of an exhaustive discussion adopts the theory that consciousness is the reality of brain-processes or the thing-in-itself. We who believe in pan-psychism, or mind stuff as Clifford defined it, welcome all new converts to this doctrine and particularly any one who will expound it as clearly and with such accurate use of language as Professor Strong has done. But I write this letter[1] at the suggestion of Professor William James to call attention to the fact that the *argument* as laid down and developed by the author is not new nor, therefore, now presented for the first time as might be inferred from Professor Strong's work, but I believe was anticipated by me in a work now possibly forgotten by the philosophic world, entitled 'The Nature of Mind and Human Automatism' (published in 1885).[2] The same views were later set forth in two articles, which I published in *Brain*[3] and in the *Journal of Nervous and Mental Diseases*.[4] The argument which I expounded at some length in the two former publications was as follows:

The theories of 'functions' and of 'aspects' (as expounded by Huxley, Tyndall, Fiske, Bain, Spencer and others) as explanations of the relation between psychical processes and cerebral processes, are insufficient and lead to fallacies of all sorts, especially in parallelism and the denial of causative relation between the mind and the

[1] This article was written as a letter to the Editor of this REVIEW.

[2] Published by J. B. Lippincott Company, Philadelphia.

[3] 'Hughlings-Jackson on the Connection Between the Mind and the Brain,' *Brain*, 1891, p. 250.

[4] 'How a Lesion in the Brain Results in that Disturbance of Consciousness known as Sensory Aphasia,' *Jour. of Nervous and Mental Diseases*, 1885.

body. It was then argued that the key to the puzzle was to be found in a proper understanding of the nature of the problem to be solved, and that "the gist of the whole question under consideration" lay in the interpretation which we give to the term *matter*, and particularly in what we mean by cerebral motion (brain-processes). Then there followed an analysis of our conception of 'matter,' the postulation of 'things-in-themselves,' the ultimate nature of mind, the identification of mind with things-in-themselves, and finally the psychical character of the real universe.

By the term *matter* is sometimes meant the unknown realities existing outside our minds, the thing-in-itself; at other times is meant the state of consciousness which is our perception of this unknown. At other times again is meant both these things. In whatever sense the term is used, the important point is the facts which the term denotes and connotes. All three conceptions represent the facts. Now what is true of the rest of the universe is also true of our brain-matter. Keeping in mind this analysis of the term matter and all the facts which it stands for, it follows that what I mean by your brain is the unknown thing-in-itself, the real brain, and my perception of that thing-in-itself. This perception is my mental picture, or my reaction to this thing-in-itself, and it is this perception which we call the material brain. The same is true of brain motion; there is the thing-in-itself and the state of consciousness which is my picture of (or reaction to) it, and which is what we call motion. Now by the hypothesis the brain process-in-itself is consciousness, and that which we call the physical brain-process is my consciousness or perception of it.

"In other words, *a mental state and those physical changes which are known in the objective world as neural undulations are one and the same thing*, BUT THE FORMER IS THE ACTUALITY, THE LATTER A MODE BY WHICH IT IS PRESENTED TO THE CONSCIOUSNESS OF A SECOND PERSON, *i. e.*, to the non-possessor of it" (p. 55).[1]

"The real question is, not regarding the transformation of matter into mind, but how *one state of consciousness comes to be perceived as another state of consciousness*, or how a subjective fact comes to be perceived as an objective fact; how a feeling comes to be presented to us as a vibration" (p. 55).

"*Physical changes* [the thing-in-itself] *occurring in a foreign body, as a piece of iron, though giving us our experience of it, must be absolutely unknown to us. Physical changes occurring in our*

[1] The quotations, unless otherwise stated, are from 'Nature of Mind,' etc. Italics always in the original.

brains are clearly known to us; they are our thoughts, our sensations, and our emotions" (p. 60).

The problem was restated in the following form in the article in 'Brain' above referred to (pp. 256 to 266, Vol. XIV.).

"That every mental act is accompanied by a physical change in the brain has become an accepted axiom, and yet, having due regard to the accuracy of language, it may be said that such a statement is absolutely false, and is the basis of most of the fallacious views on the subject. This may seem paradoxical, and probably will be challenged by every reader who has followed me thus far, and yet it is a fact which I hope to be able to make clear before I have finished.

"Does the mental action follow the physical action, or does the physical action follow the mental?" How do neural vibrations in the brain become transformed into thought and feeling? These are questions which are frequently asked, and the questioner shakes his head and tells us there is no use trying to answer them. The essayist, if he be an essayist, says that these questions are insoluble, and that we are as far as ever from obtaining a solution of the mystery. This is perfectly true. We are as far as ever from doing this, and it is safe to say that we shall never answer these questions, for the simple reason that the questions themselves are mere nonsense. They involve assumptions which are not true, and therefore the questions are absurdities and cannot be answered. We cannot say how brain action is transformed into thought, because it is not 'transformed' at all. Nor shall we be able to discover whether mental action follows the physical, or vice versa, because neither follows the other. The erroneous assumption here is that there are two different facts (the mental and the physical), each having a separate and independent existence in the same individual, whereas there is in reality only one fact, and one thing cannot very well be transformed into or follow itself. * * * For the purposes of clearness of presentation let us consider another person's pain. This is a real fact. Cerebral molecular motion is a group of conscious states, not in that person but in ourselves, and therefore it is a symbol of a something else in that other person. This something else is his pain. This pain is the thing-in-itself; the neural vibration is the visual picture which one person would have if his optic apparatus could be affected by the mental state of pain in another person. Mental states are the reality of molecular vibrations in the brain.

"* * * But if the mind is the reality of cerebral processes, it is obvious that the statement with which we started out is true, viz., that there are not two separate processes occurring synchronously side by

side, and correlated with one another *in the same individual.* There is only one process — the psychical. The physical is only an objective presentation of it in another person, just as a man pictured in a mirror is only a representation of the real man in the street. There are not two men. The real man is the real agent in the chain of circumstances making up his life. Therefore cerebral processes (which as we know them are a picture) are not transformed into, nor do they precede nor follow the psychical process, which is the real thing."

This theory gets rid of the difficulties of parallelism. There is no parallelism in the same organism because there is only one process (consciousness) and the other process is only the way it is apprehended by the second organism; 'only the sensations of, or effect upon, the second organism, when acted upon (ideally) by the real substance, mind' (p. 29).

"The common expression that 'every state of consciousness is accompanied with a molecular change in the substance of the brain,' * * * *must be regarded as unfounded and as leading to great confusion and misconception. A feeling is NOT accompanied by a molecular change in the same brain; it is 'the reality itself of that change.'* You may say, if you prefer, that a feeling in you may be ideally perceived by me as a molecular change, or that your feeling is ideally accompanied by my notion of molecular changes. *But you cannot correctly say that a feeling is accompanied by a molecular change in the same organism, because this implies two distinct existences and leads to all the fallacies of materialism*" (p. 66).

"*The parallelism is between your consciousness and my consciousness of your consciousness, or, what is the same thing, between the consciousness in you and the picture in my mind of neural vibrations.* The former is the reality, and the latter the symbol of it. There is an invariable concomitance of these facts" (p. 59).

"* * * The problem is found really to be not how molecular changes become transformed into consciousness, but how consciousness comes to be apprehended as physical changes. If the views that have been advocated above are accepted, this can be readily understood. It must be distinctly understood that it is not a question of translation or *transformation* at all, but of *identification.* Physical changes are not transformed into states of consciousness, nor are there 'two processes' which occur 'side by side' in the same person. *There is only one process*" (p. 65).

Inquiring now into the nature of mind, we find it an 'ultimate' (pp. 61–64), 'a reality' and the reality of a particular portion of this universe, namely, what is called a brain process.

The necessary deduction from all this is pan-psychism.

"It is not only possible, but in the highest degree probable, that those activities, the sum of which we call consciousness, are of a kindred nature to those activities which are the reality of phenomenal matter. Just as organic matter is made up of the same physical atoms and molecules which make up inorganic matter, combined and recombined in varying proportions, so there is every reason to believe that states of consciousness are the resultant of the combination and recombination of the elementary activities which are the realities of the physical atoms and molecules" (p. 67).

"By a still further combination of the activities underlying the properties of the simplest form of living substance, a lump of protoplasm, and manifesting themselves in its vital functions, the primitive germs of consciousness arise, and we obtain for the first time a glimpse of what these forces of the unknown universe may be" (p. 68).

"The whole universe, then, instead of being inert is made up of living forces; not conscious, because consciousness does not result till a certain complexity of organization appears, but, using figurative language, it may be said to be pseudo-conscious. It is made up of the elements of consciousness" (p. 154).

The argument by which these conclusions are reached is essentially the same as that by which Professor Strong arrives at the same result, but the writer who above all others should be credited with first setting forth the doctrine in a definite specific form is Clifford, and it is strange that Professor Strong should not realize this fact but should think that Clifford in some way held divergent views, yet I must admit on rereading Clifford's articles I do not find that his exposition is as clear as I at one time thought. There is no doubt however about his conclusions. My own argument differs essentially from Clifford's exposition, as indeed I was not familiar with his essays at the time of writing, although I took pains, just before going to press, to call attention to them in my book.

What sticks most people, or at least those who have not quite grasped the full meaning of the theory, is the difficulty of understanding how a state of consciousness can be apprehended objectively as motion.

"If cerebral motion is only a picture of the real thing, say a musical sound, why is it that the picture appears as *motion*, a so-called objective fact, while the real thing is a musical sound? The answer is not difficult, and those who have followed me thus far must have anticipated it. Let us suppose that one of us should show a kaleido-

scope to some one, who not only had never seen such a thing before, but was totally ignorant of the effect of prisms, mirrors, etc., on light, in fact, was totally ignorant of the most rudimentary knowledge of optics, and of the physical sciences. Such a person might be an inhabitant of some uncivilized island in the Pacific. Suppose such a person, looking through the kaleidoscope, to see a wonderful variegated mosaic of colours. We can easily imagine how his curiosity would be excited by what he saw. He would, probably, at once examine the other end of the tube, but only to find there, in a glass box, a lot of little pieces of coloured glass thrown higgledy-piggledy together, and nothing at all like the beautiful mosaic that he has seen. He will, probably, still ask where is the picture he has seen? and if you point again to the little box of broken glass he will not believe you. You will tell him to look once more through the tube, and as he looks you turn the kaleidoscope, and he sees a succession of changing pictures, each a symmetrical pattern of brilliant colours. Again he takes his eye from the tube to examine the farther end, but as before, he finds only a handful of pieces of broken glass, comparatively dull in colour, tumbling over each other without order or method. You tell him that is what he sees, but, incredulous, he shakes his head, and will not believe you. He insists there is something inside the tube which he sees. You continue to expostulate and tell him there is nothing there, but he retorts that there must be two things, not one. He sees an ever-changing panorama of symmetrical and orderly designs, brilliant with transmitted light, and you are only showing a lot of dull glass tumbling about, and without brilliancy. He says there are two processes totally unlike one another. He can find no similarity between the two, and therefore is confident there must be something inside the tube. So you take the apparatus to pieces, and show him there is nothing inside but some mirrors arranged in a peculiar way. If you have amused yourself sufficiently with his curiosity, and if you think him sufficiently intelligent, you will probably explain to him why it is that these pieces of glass appear so differently when viewed through the tube. It is an optical delusion. They can only appear as if arranged symmetrically because they are seen through an apparatus which, arranged according to the laws of optics, compel anything seen through it to appear in a form different from that when seen with the naked eye. So it is with mind and a cerebral molecule. If we could *optically* experience a feeling as a pain, or a musical sound, in ourselves or another person, as we can ideally, that feeling could only appear to us as it would be modified by our optical apparatus —

just as the pieces of glass were modified in the kaleidoscope. If our visual apparatus were affected by a state of consciousness in another person, it would be an absolute necessity that we should see that state of consciousness (pain, sound), not as it really is but as a visual image, viz., a molecular motion. The *reality* of that motion would be the other person's state of consciousness. This would be the thing-in-itself. Hence it follows that cerebral molecules and motion, which are commonly said to be correlated in each person's brain with his physical processes, are only the modes by which *one* person apprehends *another's* conscious states. Consciousness is not correlated with molecular motion in the same individual, but only with states of consciousness (*i. e.*, the mental picture of molecular motion) in another person" (*Brain*, pp. 268–9).

There is a very interesting deduction from this theory which I believe I was the first to carry to its logical conclusions. Let us suppose a person has a sensation of color. Another person is investigating that conscious state, color, through his visual apparatus (as with a microscope); if affected he would become conscious of it in terms of vision, and would perceive it not as color but as neural vibrations, a conscious state and symbol of the color. A third person again investigates that symbolic mental picture (a conscious state) called neural vibrations, he would perceive it in his turn as neural vibrations also, and so on ad infinitum. We would have then the following as a result of these conditions:

"In organism A: Sensation of color; an actuality and the reality of,

"In organism B: Cerebral tremors; a conscious state, and as such also a reality, but also commonly known as phenomena or matter when projected outside of the organism and given objective existence in A. It is the form in which color in A is symbolized in B.

"In organism C: Cerebral tremors; a conscious state, and as such an actuality, and the form in which the conscious state in B is symbolized in C.

"Cerebral tremors, then, are a conscious state, which may be a form of apprehending in a second organism either,

"1. An unlike conscious state— sound, color, thought, etc.

"2. A similar conscious state or cerebral tremor. In this instance of C, then, we are brought to what seems at first the surprising fact that that conscious state called cerebral tremors, which is the cognition of

the thing-in-itself, and known as phenomena, and the thing-in-itself, also cerebral tremors in B, are similar though separate facts. And under the conditions just mentioned it might almost be said that neural tremors exist outside of us as such; or in other words, *that such phenomena exist practically as we see them.* I say practically, for although the conscious state, neural motions, possessed by one organism, may be perceived by another also as neural motions in the brain of the former, still it does not follow that these first motions would be perceived as the same kind of motion. They would be perceived as motion of some kind, but not necessarily as the same kind. For instance, taking the same illustration used above, A's sensation of color might be perceived by B as undulatory motion; the conscious state of undulatory motion in B might be perceived as circular motion by C; which again might be represented in D's consciousness by spiral motion, and so on. I do not mean to say that these particular motions do actually exist. That would depend upon physical conditions not yet understood. All I mean is that some kind of motion or physical change may under some conditions be the mode of apprehending a motion which may or may not be the same in kind; and we perceive the thing-in-itself as it really exists" (pp. 81–82).

We are brought then to a conclusion of far-reaching consequence which if developed might prove to be a field of rich investigation.

Another point which I would emphasize, and which I believe I was the first to insist upon, is that this doctrine is in entire harmony with the law of conservation of energy which has been urged with telling force against every other explanation. Let us take a nervous circuit, to wit, a sensory stimulation ending in a brain process, which in turn excites an outgoing excitation along the motor nerves to the muscles. According to this law a certain amount of nerve motion in the outgoing nerves is exchanged for an equivalent amount of motion in the brain, which in turn is exchanged for an equivalent amount of motion in the outgoing nerves. The conservation of energy is complete, but *feeling* has not entered into the circuit. Of course not. If we wish to introduce feeling into the circuit we change one of the terms and then we must change all the terms of the equation. We can do it in this way:

"Letting x, then, stand for the unknown changes in the sensory nerves, and y for those in the motor, we can say that *unknown* x becomes transformed into an equivalent amount of consciousness; that consciousness becomes again transformed into an equivalent amount of *unknown* y, and with each metamorphosis a certain amount of the one

factor disappears, to be replaced by an equivalent amount of the succeeding factor. We have here, then, a circuit of ultimates corresponding to and identical with the dynamic nervous circuit, and the principle of 'correlation of forces' becomes applicable to the facts of consciousness" (p. 88).

As I said, I am led, at the suggestion of others, to once more call attention to these earlier writings of my own, partly because they are not referred to by Professor Strong (although the doctrine was fully worked out and carried even farther than has been done in Professor Strong's work), and partly in the hope that this interesting and important question may under the stimulation of Professor Strong's book awaken renewed discussion.

We, who for a long time have contended for this panpsychic doctrine and with these arguments, welcome any new comer who will break a lance for the faith, and we doubly welcome Professor Strong as a new knight.

It is important that any doctrine should be constantly restated until it has gained general acceptance or has been rejected. Professor Strong's book is a capital restatement both of the doctrine and of the facts and reasoning on which it is based. That it is a restatement is a fact worth insisting upon as evidence that the doctrine is no new one but has already received acceptance by competent writers on both continents.

MORTON PRINCE.

458 BEACON ST., BOSTON.

PROFESSOR HAMMOND ON ARISTOTLE'S PSYCHOLOGY.[1]

Professor Hammond, in his Preface, indicates the limits of the task which he has set himself. The aim of his translation and introduction is 'to make easily accessible to English scholars the scientific content of these Aristotelian treatises, and thereby to facilitate inquiry into the history of philosophical and psychological ideas.' In making it, he was, therefore, 'not interested primarily in textual questions, excepting in so far as the establishment of the text was ancillary to the establishment of doctrine,' has aimed 'to avoid the

[1] 'Aristotle's Psychology: A Treatise on the Principle of Life: (De Anima and Parva Naturalia).' Translated with Introduction and Notes by William Alexander Hammond. London, Swan Sonnenschein and Company, Lim.; New York, The Macmillan Company. 1902. Pp. lxxxviii + 339.

accumulation of notes of a purely scholastic kind, which in the present volume could only be marks of a diligent pedantry,' and has 'rigidly excluded all such matters as had no real interest for the doctrinal exposition of the treatises in hand, or for the history of science.'

Professor Hammond has displayed on the whole excellent judgment in his choice of a text and in the general faithfulness of his translation. The text is in the main that of Biehl. Where he departs from Biehl's text he generally observes the rule laid down in the Preface and calls attention to the fact in a footnote.[1]

The points of variation seem to me generally well chosen. Thus de An. III. 8. 431 b 27 *ταῦτα*, which is the reading of S and other MSS. and is supported by Sophonias and the old Latin translation, is preferable to the *ταὐτὰ* accepted by Biehl or the *ταὐτὸν* of E L, accepted by Bekker. It is difficult to see in what sense one can say that the *αἰσθητικὸν* and the *ἐπιστημονικὸν* are 'potentially the same,' or 'in potentiality, are the same.' De Sommis 2. 460 b 17–18 the reading of L S U et al. *αἴτιον δὲ τοῦ συμβαίνειν ταῦτα τὸ μὴ κατὰ τὴν αὐτὴν δύναμιν κρίνειν τό τε κύριον καὶ ὧ τὰ φαντάσματα γίγνεται* is better than that of the E family, accepted by Biehl, * * * *τὸ κύριον καὶ τὰ φαντάσματα γίγνεσθαι*. The motive of the latter reading would seem to be an unwillingness to admit that *τὸ κρίνειν*, *i. e.*, the apprehension of difference, is a function of *φαντασία*, which it undoubtedly is. Aristotle carefully explains de An. III. 3. 429 b 10–22. 7. 431 a 20–b1, the difference between the *κρίσις* of *νοῦς* and that of *αἴσθησις* and *φαντασία*. De An. III. 6. 430 b 3, Professor Hammond rejects Biehl's conjecture *⟨καὶ⟩ τὸ μὴ λευκὸν ⟨λευκὸν⟩ συνέθηκεν*, and again de Sensu 448 a 13–19 he follows in the main the text of Bekker, although apparently rejecting, with Biehl, *τῷ εἴδει*. In neither case is there any good reason for departing from the older text. He is also undoubtedly right in rejecting the *οὐ* inserted by Biehl de An. III. 1. 425 a 15 *⟨οὐ⟩ κατὰ συμβεβηκός*. In some cases, however, Professor Hammond adopts the less satisfactory reading. De Mem. 2. 453 a 14 Biehl adopts Christ's emendation *ἐπέχοντες* for the *ἐπέχοντας* of the MSS., and reads *ὅτι δ' ἐστὶ σωματικὸν τὸ πάθος καὶ ἡ ἀνάμνησις ζήτησις ἐν τοιούτῳ φαντάσματος, σημεῖον τὸ παρενοχλεῖν ἐνίους, ἐπειδὰν μὴ δύνωνται ἀναμνησθῆναι καὶ πάνυ ἐπέχοντες τὴν διάνοιαν, καὶ οὐκέτ' ἐπιχειροῦντας ἀναμιμνήσκεσθαι οὐδὲν ἧττον*, κτλ.

[1] There are a few exceptions to this rule, *e. g.*, 417 a 32 *ἀριθμητικήν*, with Torstrik, for *αἰσθησιν*; 431 b 27 *ταῦτα* for *ταὐτά*; 434 b 5 *οὐχ ἕξει* for *ἕξει*; 437 a 4, *καὶ καθ' αὑτήν*, for *καθ' αὑτήν*; 445 a 16, Professor Hammond seems to follow Bekker's text in lieu of that suggested by Biehl in the 'Corrigenda,' though not printed in the text.

Professor Hammond reverts to the older reading and translates * * * 'is proved by the fact that many persons are made very restless when they cannot recall a thing, and when quite inhibiting their thought, and no longer trying to remember, they do recollect nevertheless.' His choice here seems to have been determined by a misapprehension of the meaning of *ἐπέχειν τὴν διάνοιαν*. 'Inhibiting their thought' is not another way of expressing 'no longer trying to remember'; it in fact implies just the opposite. The 'inhibition of thought' which Aristotle is here talking of is that which he elsewhere (Phys. VII. 3. 247 b 17) denotes by *καθίστασθαι τὴν ψυχὴν ἐκ τῆς φυσικῆς ταραχῆς* and (Phys. I. 9. 192 a 15) by *ἀτενίζειν τὴν διάνοιαν*, *i. e.*, it is that arrest of the desultory idea-trains which is involved in any vigorous effort of attention, such as the effort to recall. That recall is dependent upon a physiological process of some kind Aristotle would prove by two considerations — we sometimes cannot recall when we try to, at other times do recall when we are not trying to.

In general Professor Hammond holds firmly to the happy mean between extreme literalness and extreme freedom. The exceptions are but few. He sometimes varies his mode of translating a word with no apparent reason save the desire to avoid repetition, *e. g.*, de An. I. 1. 403 b 2 the words, * * * *καὶ ὁ λόγος. ὁ δὲ λόγος*, are rendered 'or reason of the thing. For the notion,' and in de An. II. 8. 421 a 1, the words, *τύπτει τὸν ἐν τῇ ἀρτηρίᾳ πρὸς αὐτήν*, are rendered 'produces an impact of the air already in the windpipe against the trachea itself.' More serious is his tendency, when breaking up Aristotle's complex sentences into shorter English sentences, to omit the particles by which the relations of the different elements are indicated. The long sentence de An. II. 2 414 a 4–14 is a good illustration. Aristotle first asserts that the phrase 'that by means of which we live and preceive' has two senses; then gives illustrations of the two senses drawn from other fields — we know by means of knowledge and by means of the soul, we are healthy by means of health and by means of the body; then applies this method of analysis to the case in point, 'the soul is that by means of which we in the first instance live, perceive and think, consequently it would be a kind of Ratio and Form, not Matter and the Subject.' This sentence is broken up by Professor Hammond into four sentences, the interrelations of which are far from obvious, even after repeated readings.

Seldom does one find the translation of a passage apparently influenced by a preconceived idea as to what the passage ought to mean, although a few cases occur which can hardly be explained otherwise. De

An. III. 4. 429 b 30 Aristotle remarks *δυνάμει πώς ἐστι τὰ νοητὰ ὁ νοῦς, ἀλλ' ἐντελεχείᾳ οὐδὲν πρὶν ἂν νοῇ*, and earlier in the chapter he uses almost the same language, 429 a 22 *ὁ ἄρα καλούμενος τῆς ψυχῆς νοῦς * * * οὐθέν ἐστιν ἐνεργείᾳ τῶν ὄντων πρὶν νοεῖν. διὸ οὐδὲ μεμῖχθαι εὔλογον αὐτὸν τῷ σώματι. ποιός τις γὰρ ἂν γίγνοιτο, * * * ἢ κἂν ὄργανόν τι εἴη, * * * νῦν δ' οὐθέν ἐστιν.* These words seem to import that the *νοῦς* of the individual, before it is actualized in the act of intuition, is in actuality nothing whatever. Professor Hammond translates the significant words as follows: — (I follow the order above given and the italics are mine) — 'The mind is potentially the object of thought, though *perhaps* not actually *so* until thought takes place.' 'What we call reason in the soul * * * is, prior to the exercise of thought, *no reality at all.* It is therefore wrong to suppose that reason itself is mixed with the body. For in that case it would have certain qualitative distinctions * * * or it would be a sort of instrument * * *. But in point of fact it is nothing *of the kind.*" All these modes of translation represent Aristotle as saying that *νοῦς* is not this, that or the other — not the object of thought, not reality, not quality, not an instrument. In only one of the three passages does Aristotle limit his assertion that *νοῦς* is nothing — in the second he says it is *οὐδὲν τῶν ὄντων*, which is here rendered, 'no reality at all.' Whether this is to be regarded as right or wrong depends upon the meaning one attaches to the word 'reality.' It suggests to my mind that, while the *νοῦς* in potentiality is not a real thing, it may very well be 'of such stuff as dreams are made of' — sensations, memories and other mental images. But by *ὄντα* Aristotle means, not merely *τὸ ὂν καθ' αὑτό*, but also all the *ὄντα κατὰ συμβεβηκός*, and in declaring that *νοῦς* in potentiality is *οὐδὲν τῶν ὄντων* he implies that one can attach to it no predicate whatsoever in actuality. It is difficult to resist the inference that Professor Hammond has here been influenced by his theory, set forth in this book in the introduction, that by *νοῦς παθητικὸς* Aristotle meant, 'the content of the central sense — memory and phantasy' (p. lxxxi). Upon this raw material or matter, according to this theory, the active reason, which is itself without content, operates and produces the *νοήσεις, νοήματα*, 'intuitions.' The intuition then is just as much a *σύνολον*, or composite of matter and form, as is the statue or any other material thing, and that which is potentially such an intuition is no more to be described as *οὐδὲν* or as *οὐδὲν τῶν ὄντων* than is the bronze which is potentially the statue. This interpretation seems to me something more than questionable, but the subject is too difficult for discussion in a review. Whatever Aristotle's meaning, it would have been better in passages of such importance to adhere more closely to his language.

Professor Hammond's treatment of the technical terms calls for little comment. Most of the equivalents chosen are appropriate, but he seems in each passage to have been guided in his choice rather by the feeling of the moment than by any definite system of equivalents.

He has made little effort to reconstruct the conceptual background, which one must possess if he is to understand Aristotle's elliptical diction. Very seldom indeed is the sequence of thought made clearer by the insertion of a clause in brackets, and the notes are brief and are often lacking when most needed. As a rule they are designed to explain allusions or to summarize the purport of the text. Many of them, those of the latter type in particular, are excellent. But when one comes to the really difficult passages, they give but little aid. Thus de An. II. 12.424 a 17–b 3 contains a summary of the theory of sensation; III. 2. 425 b 26–426 a 26 contains an explanation of the senses in which the objective quality and the subjective sensation are said to be the same and different; III. 6. undertakes to show how *νοῦς* apprehends as unities mental contents consisting of parts, such as the judgment (430 a 26–b 6), things extended in space and time (b 6–14), the *εἴδη* possessed by such objects (14–20), negations of extension or of an *εἶδος* (20–24). All bristle with difficulties of the most formidable kind, yet the notes are of the scantiest. Such notes could scarcely be regarded as 'marks of a diligent pedantry.'

But by far the most serious criticism than can be made of Professor Hammond's book will be based upon a certain lack of thoroughness and of accuracy which it presents. This is sometimes manifested in small things — a few typographical blunders remain uncorrected,[1] some words and phrases of the text are omitted in the translation,[2] and occasionally Greek words are mistranslated in a way that can be ascribed to negligence only.[3] But one is often forced to the conclusion that the translator has not himself taken the pains to master the meaning of the text before putting it into English. Some renderings, while correct enough from the grammatical point of view, fail to make

[1] 405 a 24, first for finest; 408 b 9, sort for part (?); 414 b 22, derivations for derivatives (?); 432 a 1, in for is; p. 181 N. 2. 213 for 231 (?); 413 a 27 processes for places (? *τόπους*).

[2] 402 a 18, *δεήσει γὰρ λαβεῖν περὶ ἕκαστον τίς ὁ τρόπος*; 406 a 19, *κινεῖται γὰρ καὶ ταῦτα ἀλλὰ κατὰ συμβεβηκός*; 408 a 31, *καθάπερ εἴπομεν*; 420 a 10, *ἀκριβῶς*; 424 a 31, *τοῦτο δ'ἦν ἡ αἰσθησις*; 426 b 3 *ὡς λόγου τινὸς ὄντος τῆς αἰσθήσεως*; 426 b 27, *οὐ μέντοι ὅτι νῦν ἕτερον*; 433 a 15, *οὐ γὰρ ἡ ὄρεξις, αὕτη ἀρχὴ τοῦ πρακτικοῦ νοῦ*; 439 b 4, *καὶ προσιοῦσι*.

[3] 419 b 15, *κοῖλα* 'hard'; 428 a 11, *σκώληξ*, 'worm'; 404 b 8, *κινητικώτατον* 'most mobile'; 405 a 10, *κινητικόν*, 'easily moved'; 420 b 31, *τὸ τύπτον*, 'the impact'; 402 b 7, *ἤτοι*, 'whether'; 413 b 17, *φαίνεται ζῶντα*, 'appear to live' (and elsewhere); 447 a 5, *ὑπὸ τοῦ ἀλλοιοῦντος*, 'through its own alteration.'

the meaning clear, while others convey a false impression of the meaning. A few illustrations must suffice.

Among the common meanings of *λόγος* is that of 'ratio.' The proportion Aristotle always, so far as I have been able to discover, terms *ἀναλογία*, or *τὸ ἀνάλογον* — never *λόγος* or *μεσότης*, although the latter term is used for the proportion by the later arithmeticians, as Nicomachus and Theo of Smyrna. In dealing with compounds the essential nature of which depends upon the quantity of each component found in them, Aristotle frequently represents the *λόγος* 'ratio' which these quantities bear to one another as the *εἶδος* 'form' of the compound. Many allusions to this doctrine occur in his psychological writings, and the rendering of some of them in this translation fails to convey a clear notion of the meaning. Aristotle says, de An. III. 2 426 a 29, that the *συμφωνία* or harmonious concord, *e. g.*, the fundamental and its fourth, fifth, octave, etc., is a *λόγος*, meaning that the string lengths, pipe lengths, etc., which produce the component notes, bear to one another a ratio constant in each, ¾, ⅔, ½, etc. Here we have merely 'relation of parts.' In de Sensu, 7, 448 a 8–9 he describes the same concords as *λόγοι ἀντικειμένων* 'ratios of contrasted (qualities).' It is here translated, 'their ratios have the characteristic of contrariety.' In de An. III. 4, 429 b 15 Aristotle says 'by the perceptive (part or power) of the soul we distinguish hot and cold *καὶ ὧν λόγος τις ἡ σάρξ*, *i. e.*, 'and (to generalize, the sense qualities) of which the flesh is a kind of ratio.' The peculiar nature of flesh, as of any other homogeneous substance, consists in the fact that in it the primary sense qualities, hot and cold, wet and dry, are combined in quantities bearing to one another a constant ratio. The phrase is here translated, 'of which flesh is a kind of register.' A misapprehension which relates to the same theory is found in the notes upon de Sensu 3. In that chapter Aristotle discusses the three conceivable ways of compounding the extremes black and white in the derived colors — by juxtaposition, superposition and blending, and rejects the first two in favor of the third. We have here the notes: (The theory of juxtaposition) 'viz., the number theory which Aristotle rejects.' "The first two theories, viz., the numerical and superpositional, are here rejected in favor of the theory of substantial mixture." But all three theories are equally 'numerical,' and Aristotle nowhere rejects, but explicitly accepts, the numerical aspect of the third theory.

The term *τὸ εἶναι* means, in Aristotle's technical phraseology, the immediate content to consciousness of the thing which the word in ques-

tion denotes. Thus *τὸ ἀγαθῷ εἶναι* is 'the essential meaning to consciousness of the word *ἀγαθόν*,' and this, again, Aristotle regards as the ultimate or real being of the thing which *ἀγαθὸν* denotes. The constantly recurring phrase, *ταὐτὸ μὲν ἀριθμῷ, τῷ δ' εἶναι ἕτερον*, means, 'the terms or expressions in question are distinct when one considers their immediate content or significance to consciousness, but the traits they denote are both presented by one and the same thing,' as for example 'the road from Athens to Thebes' and 'the road from Thebes to Athens' denote the same road, but the expressions differ in *εἶναι*. To take a modern illustration, 'Theodore Roosevelt' and 'the President of the United States,' denote the same individual, but the terms differ in *εἶναι*.

Aristotle frequently makes use of this principle in solving the puzzles of his day. Thus, Physics III. 3, he undertakes to show that *ποίησις* and *πάθησις* are but two ways of thinking one and the same thing, namely, the *κίνησις* in question, and as the latter is undeniably located in the *κινούμενον*, he comes to the somewhat paradoxical conclusion that the actualization of a creative factor is located, not in the creative factor itself, but in the thing upon which it operates. The instructor is an instructor in actuality only when instructing, but 'instructing' is only another way of conceiving the process which we also call 'learning,' and learning is a kind of change which takes place *in* the learner.

De An. III. 2, 425 b 26–426 a 26 Aristotle applies this latter principle to the problem raised by Democritus, Protagoras and others, "Do objective qualities exist at all? Are not all sense-qualities mere subjective sensations existing in the sense organ only?" He first admits that we are here dealing not with two things but with one thing conceived in two ways, 425 b 26 *ἡ δὲ τοῦ αἰσθητοῦ ἐνέργεια* (*i.e.*, the objective quality, *e. g.*, *ψόφησις*) *καὶ τῆς αἰσθήσεως* (*i. e.*, the subjective sensation, *ἄκουσις*) *ἡ αὐτὴ μέν ἐστι καὶ μία, τὸ δ'εἶναι οὐ τὸ αὐτὸ αὐταῖς*, and then applies the general principle 426 a 2 *εἰ δή ἐστιν ἡ κίνησις καὶ ἡ ποίησις καὶ τὸ πάθος ἐν τῷ ποιουμένῳ, ἀνάγκη καὶ τὸν ψόφον καὶ τὴν ἀκοὴν τὴν κατ' ἐνέργειαν ἐν τῇ κατὰ δύναμιν εἶναι· ἡ γὰρ τοῦ ποιητικοῦ καὶ κινητικοῦ ἐνέργεια ἐν τῷ πάσχοντι ἐγγίνεται.*

"If then (whenever anything is being made) the motion, the making, the modification (exists) *in* what is being made, necessarily both the (objective) sound and the (subjective) hearing (when existing) in actuality, exist *in* that (which was) potentially (sound before sound was actualized, *i. e.*, the sense organ)." Sound then really exists in the ear. When we think it as so existing, we call it in modern

terms subjective, in Aristotle's terms ἄκουσις. When we think it as caused by something external, we call it objective, *i. e.*, ψόφησις. But it is the same sound. Or in Aristotle's own concise language (Phys. III. 3 202 b 21) τὸ γὰρ τοῦδε ἐν τῷδε καὶ τὸ τοῦδε ὑπὸ τοῦδε ἐνέργειαν εἶναι ἕτερον τῷ λόγῳ. "'The actualization *of* this *in* that,' and, 'the actualization *of* this *by* that,' are different in definition (or concept, *i. e.*, in εἶναι or content)."

The first of the two passages which I have quoted (425 b 26), Professor Hammond translates correctly enough, but adds the note, 'The one is the condition of the other,' which is far from Aristotle's meaning. The second passage he translates as follows:

"If, then, movement, activity and passivity are implied in the produced object, it must be that actual sound and hearing exist in a potential state. For creative and motive activity is given in antecedent passivity." Who could gather Aristotle's doctrine from this? And his translation of a parallel passage (de An. II. 2. 414 a 11) δοκεῖ γὰρ ἐν τῷ πάσχοντι καὶ διατεθεμένῳ ἡ τῶν ποιητικῶν ὑπάρχειν ἐνέργεια is equally obscure — realization is supposed to attach to that which has power to effect changes and is found in a passive and recipient subject.'

De Sensu, 6. 446 b 17, Aristotle raises the ἀπορία, "Can two individuals, one with his proper organs of sense and another with his, both simultaneously see, hear, smell one and the same thing?" To this he replies ἢ τοῦ μὲν κινήσαντος πρώτου, οἷον τῆς κώδωνος ἢ λιβανωτοῦ ἢ πυρός, τοῦ αὐτοῦ καὶ ἑνὸς ἀριθμῷ αἰσθάνονται πάντες, τοῦ δὲ δὴ ἰδίου ἑτέρου ἀριθμῷ, εἴδει δὲ τοῦ αὐτοῦ (leg. αὐτοῦ), διὸ καὶ ἅμα πολλοὶ ὁρῶσι καὶ ὀσμῶνται καὶ ἀκούουσιν.

"All perceive one, numerically, and the same original source of the stimulus, *e. g.*, a bell, incense, fire — but (each perceives) his own (percept, and this is) numerically distinct (from) but in kind the same (as that of his neighbor); consequently many (individuals), simultaneously too, (*do*) see, smell, hear (one and the same thing)." Which Professor Hammond translates as follow: "The primary stimulus, as a bell, frankincense, or a fire, is perceived by all as numerically one and the same, but in its peculiar qualities it is perceived with numerical differences, though in its essential nature as one and the same thing; for which reason many persons see, smell, or hear the same thing at the same time."

De An. III. 1. 425 a 30. τὰ δ' ἀλλήλων ἴδια κατὰ συμβεβηκὸς αἰσθάνονται αἱ αἰσθήσεις, οὐχ ᾗ αὐταί, ἀλλ' ᾗ μία, ὅταν ἅμα γένηται ἡ αἴσθησις ἐπὶ τοῦ αὐτοῦ, οἷον χολὴ ὅτι πικρὰ καὶ ξανθή· οὐ γὰρ δὴ ἑτέρας γε τὸ εἰπεῖν ὅτι ἄμφω ἕν.

"(When) a sense perceives *per accidens* (or mediately, qualities

the perception of which is) peculiar to another sense, (it does so), not in so far as (it is) itself, but in so far as (it and the other sense are) one, (*i. e.*, are unified in the Common Sense, and this takes place) whenever (both senses) are applied to the same (object), as, for example, (when taste and vision simultaneously perceive) that bile is bitter and yellow, for (in that case) it certainly is the function of none other (than the Common Sense) to affirm that both (qualities) are one (object)." In Professor Hammond's translation this is rendered: "A sense, however, perceives accidentally the qualities that are peculiar to a different sense, not in their own nature but because of the unity of those qualities, as when two sense-qualities apply to the same object, *e. g.*, in the case of bile that it is both bitter and yellow. Now, it is not the function of either particular sense to say that both these qualities inhere in one thing," etc.

De An. IV. 4. 429 b 10–22, Aristotle undertakes to show that if one admits that the concrete individual and its Real or Conceptual Being are different in the real world, the mental content by which we distinguish from other things and apprehend the individual must be different from that by which we apprehend its Real Being. Or at least I shall interpret the passage upon that hypothesis. His language is elliptical in the extreme, and could be interpreted upon the hypothesis that he is arguing, not from a difference in the real world to a difference in apprehensive content, but from a difference in apprehensive content to a difference in the power or 'faculty' to which that content owes its birth. He first (10–17) considers gross concretes of sense. He then turns to the semiconcretes of abstraction, *i. e.*, the units, points, lines, surfaces and solids with which arithmetic and geometry deal. All these involve either discrete or continuous quantity and cannot therefore be regarded as wholly free from the concrete.

(18) *πάλιν δ' ἐπὶ τῶν ἐν ἀφαιρέσει ὄντων τὸ εὐθὺ ὡς τὸ σιμόν· μετὰ συνεχοῦς γάρ· τὸ δὲ τί ἦν εἶναι, εἰ ἔστιν ἕτερον τὸ εὐθεῖ εἶναι καὶ τὸ εὐθύ, ἄλλο· ἔστω γὰρ δυάς. ἑτέρῳ ἄρα ἢ ἑτέρως ἔχοντι κρίνει. καὶ ὅλως ἄρα ὡς χωριστὰ τὰ πράγματα τῆς ὕλης, οὕτω καὶ τὰ περὶ τὸν νοῦν.*

This I would translate as follows, substituting for the untranslatable *σιμόν* the parallel term 'aquiline,' which, indeed, Aristotle himself uses elsewhere (278 a 28 sqq.) to illustrate the same point.

"Again, in case of the things which exist in abstraction, 'the straight' corresponds to (that which I have just illustrated, in dealing with the concretes of sense, by) 'the aquiline,' for (in 'the straight,' 'straightness' is conjoined) with 'continuum' (precisely as in 'the aquiline' 'archedness' is conjoined with 'nose'), but the Conceptual

Being, if the 'Being of straight' is other (in the real world) than 'the straight,' is (in consciousness) something else (— not 'straight continuum'). Let (us, with certain philosophers, assume) it, then, (to) be Two, (upon the ground that straightness is implied in Two, because the shortest line connecting any *two* points is necessarily straight, while that connecting any three or more is not straight necessarily). Then one distinguishes ('Two') by (a mental content) other (than that by which one distinguishes 'the straight') or by the same (content) in another condition. And, to generalize, we may infer that in what (soever) way the (Real) Things (*i. e.*, the Real or Conceptual Beings of concrete or semiconcrete objects, are) separable (in the real world) from the Matter (with which in those objects they are conjoined), in that way (are) the (mental contents) in the realm of Reason (by which we distinguish their Real Beings, distinct from those by which we distinguish the objects)."

How widely Professor Hammond's understanding of the passage differs from mine his translation shows:

"We refer the straight line as we do the snub nose to abstract entities, for they are both associated with the continuous. But the essential notion of a thing, if straightness and the straight line are different (and they are two things), is apprehended by a different power. The mind, then, judges in the two cases by means of a different power or by means of a power differently conditioned. In a word, therefore, as there are things abstracted from matter, so there are things that concern the reason."

De An. III. 12. 434 a 31 Aristotle gives a brief formula for the theory of chance which he has worked out in detail Phys. II. 5 and 6. * * * *εἰ μηθὲν μάτην ποιεῖ ἡ φύσις. ἕνεκά του γὰρ πάντα ὑπάρχει τὰ φύσει, ἢ συμπτώματα ἔσται τῶν ἕνεκά του* which runs, in Professor Hammond's translation, as follows: "* * * if it is true that nature creates nothing in vain. For everything in the natural world exists for a purpose or is the condition of something that exists for a purpose." But *σύμπτωμα* does not mean 'condition.' It means 'coincidence' or 'concurrence.' Aristotle conceives of Nature as a complex system of processes, each of which has its normal purpose or end and will reach that end unless blocked by some obstacle. If then we find, as we sometimes do, that a process fails to reach its end, or that an end which properly belongs to a given process appears as the final term of another, the phenomenon must be ascribed to the fact that different processes *συμπίπτουσιν*, 'fall in with,' and hence interfere with, one another.

An analogous formula, found in the eleventh chapter of the same book, is intended to cover the essential features of the practical syllogism:

434 a 16, *ἐπεὶ δ' ἡ μὲν καθόλου ὑπόληψις καὶ λόγος, ἡ δὲ τοῦ' καθ' ἕκαστα (ἡ μὲν γὰρ λέγει ὅτι δεῖ τὸν τοιοῦτον τὸ τοιόνδε πράττειν, ἡ δὲ ὅτι τόδε τοίνυν τοιόνδε, κἀγὼ δὲ τοιόσδε), κτλ.*

It is here translated as follows:

'Since we have two principles in conduct, on the one hand the general conception and notion, on the other the particular notion (of which the one says that a man of such and such a kind shall act in such and such a way, and the other that this particular man — and I am that particular man — shall act in a given way),' etc. This quite misses the point. The practical syllogism requires, besides the general law, two particular propositions, one applying the law to the individual man and the other to the individual act. For example:

'All religious men fast on Friday;
I am a religious man;
I should fast on Friday.
To-morrow is Friday;
I should fast to-morrow.'

The clause in parenthesis should read 'of which the one says a man of such and such a kind should act in such and such a way, the other that *this* is the way in question and that *I* am a man of the kind in question.'

A few similar instances of misapprehension occur in the notes. To one or two of these I have already referred. Another is found in de An. III. 9. 433 a 4. Aristotle remarks that the mere possession of knowledge — *e. g.*, that of the physician — does not suffice to produce action in accordance therewith, *ὡς ἑτέρου τινὸς κυρίου ὄντος τοῦ ποιεῖν κατὰ τὴν ἐπιστήμην*. This 'other something' is, of course, *βούλησις* or *ὄρεξις βουλευτική*, 'settled, deliberate wish' or 'will' to attain the end the means to which are prescribed by the knowledge in question. The note here reads, 'It is not science but nature, the principles and laws of whose operation are formulated by science, that heals.'

But in the notes such slips are exceptional. In the text they are, unfortunately, much more common — sufficiently common to impair its value to a very considerable degree. And more common still are passages, which, although translated correctly enough, fail to make Aristotle's meaning as clear as it might be made.

The introductory outline of Aristotle's psychology is on the whole

excellent. It is clear, brief, adequate and generally accurate. At some points it is open to attack, but these are for the most part points upon which difference of opinion is to be expected. The account given of Reason is to me the least satisfactory part of it. As I have already remarked, it differs very widely indeed from Aristotle's theory as I understand it.

A good English translation of Aristotle's psychology is needed, and there is a deal of good work in this book. As it stands, Professor Hammond's translation of the de Anima, if inferior to the (French) translation of Rodier, is indefinitely better than that of Wallace, and hitherto we have had none other in English. Perhaps Professor Hammond may find the opportunity in a future edition to remove any blemishes and thereby to put the English-speaking student of Aristotle yet more deeply in his debt.

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PSYCHOLOGICAL LITERATURE.

Genetic Psychology for Teachers. CHARLES HUBBARD JUDD. (International Educational Series.) New York, Appletons. 1903. Pp. xii + 329.

Professor Judd's work is neither a text-book on genetic psychology nor a systematic exposition of its underlying principles, as its name might seem to imply. It is rather an application of genetic principles to the peculiar interests and domain of the school teacher. The author believes that the average teacher, dealing constantly with immature minds that have reached only a limited stage of development, stands in great danger of mental stagnation — a danger which can best be removed by the cultivation of new interests in connection with his work. The study of the child's mental processes and their growth has already attracted much attention among teachers. But the author urges that the meaning of results so obtained can only be properly appreciated by comparison with the corresponding processes in the fully developed mind. In other words, the teacher should study himself as well as his pupils. The well-established fact that the child sees only the points of interest to himself in his environment and interprets these in many cases wrongly, stands in a new light when we discover that the adult is liable to a similar error. Such an error in adult interpretation is illustrated by the long list of optical illusions, many of which are cited by the author with drawings and explanations. Again, the common motor habits have become so automatic with the adult that he is often unable to trace their antecedents in the simpler forms of motor activity exhibited in childhood. In order to establish the connection the author recommends an experimental analysis of the separate muscular elements which enter into such habits, with a view to determine just what distinct motor factors contribute to the finished product and how they are coördinated. Handwriting and reading are analyzed at considerable length by this method in three chapters, with descriptions and graphic records of actual experiments. Another chapter deals with the 'third R,' arithmetic, principally in the way of discussing the phylogenetic origin of the idea of number.

Interwoven with these concrete problems are several chapters devoted to discussion of educational ideals in general, their origin, meaning, development, and present tendencies. Taken as a whole, the

book, though somewhat lacking in unity, is well adapted to serve as a stimulus to the practical study of genetic psychology, and will tend to broaden the teacher's professional vision and elevate his ideals.

H. C. W.

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The Laws of Imitation. G. TARDE. Translated by E. C. PARSONS. Preface by F. H. GIDDINGS. New York, Holt. 1903. Pp. xxix + 405.

In this translation we welcome M. Tarde's well-known and influential work. It was the beginning of the series of studies, both psychological and sociological, on this and kindred topics, which are still appearing. To M. Tarde's volume we owe much of the current interest in social psychology; and we predict for it the cordial welcome of students in more than one field. The general character of the work is too well known to require extended analysis; and its views have been too well apprized already in the literature to require commendation or criticism. Those who do not read French should look into M. Tarde's little book *Social Laws*, translated by Professor Warren, for the relations of the theory of imitation to the author's later-developed views.

But why should the Holts issue a book so badly printed? The print is from unclean type and the impression most uneven. The back of the book, also, quite unjustifiably reads *Tarde's Laws of Imitation — Parsons;* not agreeing with the title page. From this the reader would expect an original treatise by Parsons on Tarde's work!

J. M. B.

The Psychology of Expectation. CLARA M. HITCHCOCK, Ph.D. Mon. Sup. to The Psychological Review, No. 20 (Vol. V., No. 3), 1903.

This monograph is an attempt to show the psychological nature and importance of the process of expectation in the construction of the inner life of consciousness and the external world of reality. The introduction contains some general and suggestive remarks on these points, followed by a brief historical sketch which shows that expectation, unlike memory and other mental processes, has received scant mention in the writings of early philosophers; while modern psychologists are, for the most part, content with a brief account of its workings. It is classed by them variously, sometimes with belief, sometimes with feelings or emotions and, again, with the cognitive processes.

The writer places it in the latter class; first, because its reference is distinctly objective, pointing to that which has definite time and space relations beyond the individual mind, whereas emotion pertains to the subjective side of an experience. Again, while expectation forms the intellective element in various prospective emotions such as hope, fear and dread, it is not itself an emotion. The bodily resonance so essential to emotion may or may not be present in expectation. It is true that anticipations which have special interest for us are accompanied by marked feeling; but there are multitudes of commonplace anticipations that serve their purpose of preparation in the routine of life and pass unnoticed. Thirdly, expectation cannot be ranked as a feeling because, of itself, feeling cannot anticipate any more than it can remember, since it has no time direction; this belongs entirely to ideas.

The relation of expectation to feeling is the same as that of memory or any other cognitive process; that is, it may be accompanied by an affective tone either pleasant or unpleasant. Feeling alone cannot form the object of expectation. To anticipate a pleasant time, for example, is to have an immediate experience of a pleasure feeling in connection with an idea that has a future reference.

Structurally, expectation is composed of a complex of sensory and motor images and organic sensations having a peculiar relation to the presentative element in consciousness. This relation is due to the vibrations of attention and forms the basis of the time consciousness. Functionally, expectation is of great importance. 'It rests upon habit, but not habit understood as the forging of a chain of isolated occurrences; but as the repetition of steps leading to some known end.' Hence it serves the purpose of preparing the mind for coming events. Besides this practical work of preparation, anticipation has a distinctly cognitive function, that of assuring 'the mind of the real existence of objects not present to sense perception.'

Future reference, in the form of expectation, precedes any reference to the past. Biological considerations demand that the earliest reactions in the developing consciousness be for the preservation of the organism, and this would force primitive ideation into the prospective form. All analogy points in this direction also. Would it not be, queries the writer, a strange reversal of the natural order if, in the mental life, one must first look backward and then later learn to look forward? Careful observations of the child's developing mind show that it continually turns forward; that it is prospective rather than retrospective.

There are various forms of expectation ranging from 'a simple, mechanical process as immediate as perception, through mediate forms which are at first reproductive, depending on the mechanism of association, then apperceptive and productive, up to the highest forms of construction such as the hypotheses of science and the ideals to be realized in art and conduct.'

Expectation is held to be the basis of various more complex intellective processes, particularly of conception and reasoning. The supplementary images in perception are anticipatory, and illusion is but the impossibility of realizing such images. Expectation is also a factor in volition.

The prospective reference is implicated in many of the categories. For example, substance implies the continuous exercise of capacity in one or more directions, and capacity, after all, means a belief in our expectations that certain changes will take place under certain circumstances. The principle of sufficient reason is analyzed into the categories of causality and finality, and the dependence of both upon expectation is pointed out.

Not only does our immediate knowledge of the world about us depend on this process, but it is involved in the ultimate test of all knowledge. "Is it true?" does not mean merely, "Is it consistent with experience up to date?" but also, "Will it realize anticipations of future experience." The latter question can be answered only by experiment, whether this be of the practical or scientific sort. If successful, these rational expectations, technically called assumptions, may become the established laws of nature. To quote the concluding words of the monograph, "What are the laws of motion but the expectations of reason concerning the position of bodies in space? We are thus justified, not only in saying that all complete knowledge involves anticipation, but also in affirming that all rational expectation is knowledge."

THE AUTHOR.

The Perception of Number. J. FRANKLIN MESSENGER. Psychological Review, Monograph Supplement No. 22, June, 1903.

The work is a continuation of an article published in the Harvard Psychological Studies Vol. I. (Monograph No. 17). It deals with the sense of touch and the sense of sight, and attempts to throw some light on the method of perceiving objects in groups. It treats of 'fusion' in order to show the difference between real fusion of sensations and the recognition or non-recognition of a number of objects

presented at once. The following classification is given: There are three kinds of combinations which are fundamental in explaining the relations of consciousness to the external world; (1) elements may be inseparably connected for perception yet separately conceivable, (2) elements which can be perceived separately may be combined so as to produce an entirely new and distinct quality of sensation, (3) different qualities of sensation may be combined to form a single object. The perception of objects in groups does not fall within this classification, and is an experience of an altogether different sort. That experience is the result of analysis and not of synthesis. The process is this: (1) the perception of an undivided whole, (2) the analysis of that whole into parts — this involves temporal succession; (3) setting the parts into a correspondence with the number series for the convenience of description and fixation by association. When this has been done enough times to firmly establish the association the process is no longer necessary, and the observer may come to think he directly perceives the number.

The tendency to move in order to aid perception is attributed to the desire to restimulate the sense organs, and is not regarded as evidence of a motor element in sensation. The observer moves his muscles because he has control of them and he has not control of the stimulating object. If he had control of the latter he could accomplish the same thing by moving it. Movement has a direct effect upon sensation only in so far as it is an object of sensation.

No attempt is made to discover how many things can be perceived at once. The question is rather, what are the factors which influence the perception of number.

THE AUTHOR.

SOCIAL AND INDIVIDUAL.

Le Mensonge; Étude de Psycho-Sociologie Pathologique et Normale. G. L. DUPRAT. Paris, Alcan, 1903. Pp. 190. 18mo.

This study of lying has grown out of a lecture delivered primarily in the interests of the 'Société libre pour l'étude psychologique de l'enfant.' It includes a classification of various kinds of lying, and a study of the psychological, physiological and social causes which produce the habit of deception. The primary classification is that of positive and negative, the former including inventions, fictions, simulations, additions, distortions and exaggerations, the latter dissimulation, denial, suppression of evidence, omission, mutilation and attenu-

ation. In concrete cases, there are of course frequently both aspects of falsification. In an examination of cases undertaken by the society above named, there were found to be 42 negative, 131 positive, and about 75 mixed cases. More interesting is the study of conditions which give rise to lying. The study of pathological cases and of children leads the author to this formulation: "Lying may be due either, on the one hand, to all sorts of tendencies, appetites or repulsions, which act either as impelling forces, or as obsessions, or as principles of systematization in minds imperfectly organized as regards the coherence of their ideas, and their psychological continuity, or on the other hand, to a defect of higher intellectual or social sentiments." It is notable that in 136 cases of lying observed among children, 75 were caused by fear and 24 by pride, self-love or boasting. The conclusion from the first figures, for the parent and educator, is very evident: that if he wishes to combat successfully the lying habit in children, he must beware of appealing to fear, since this is by far the chief cause of the habit.

Lies which may be classed under the general head of boasting or more or less æsthetic modifications of bare facts are closely allied to the free use of imagination in poetry and fiction. The 'make-believe' element which is common to both is a part of the natural play-impulse of the child and is one avenue through which freedom of mental functioning finds expression. As this in general means a breaking up of the ordinary or habitual associations in favor of free invention, it is favored by complexity of experience, so that Ribot's law applies here: 'The tendency to spontaneous variation (invention) is always in inverse ratio to the simplicity of the environment.' The complicated situations of modern life tend, therefore, to supply the conditions for greater invention on the child's part and therefore for greater ability to deceive.

Among social causes for lying are mentioned especially the pressure of group or collective life in party or church or in the less organized crowd, the conventions of society, and the organization of the press, which though composed of men who individually are honest, is very deceptive in its reports of news. Contrary to frequently expressed opinions, the author finds no decided racial pre-eminence in either lying or truthfulness. Different races merely have different forms. Savages especially exhibit craft or cunning not so much among themselves as in dealings with the greater strength of civilized races. Whatever of truth underlies the common opinion that women are less truthful than men, is traced not to any sexual difference but rather to the necessity which woman frequently experiences

of meeting a greater physical force, or else to the artificial conditions of present civilization which tend to check her free development. In the latter case, as in the cases of members of sects and parties, above noted, the most potent cause is seen to be lack of independence. The educator or parent, therefore, who wishes successfully to combat tendencies to deception, so far as they proceed from this source, should foster independence of judgment, both intellectual and moral, in every way possible. Where, on the other hand, lying arises from egoism or cupidity, the reliance must rather be upon the cultivation of the higher sentiments which are able to inhibit the lying impulse. It is, however, noteworthy that a certain sort of lies which are very common among children spring not from egoistic tendencies but rather from the spirit of solidarity in the group, which prevents the child from betraying his companions.

The study is one which deserves the reading of both parents and teachers.

L'Ennui, Étude Psychologique. Émile Tardieu. Paris, Alcan. 1903. Pp. viii + 297.

This is a very elaborate classification and exposition of the various forms of ennui, especially those which are prevalent in modern life. The ennui of exhaustion, the ennui caused by lack of variety, by satiety, by narrowness of interests, the ennui peculiar to various ages, to woman, and to various characters, are treated in detail and illustrated from literature and life. A few brief suggestions as to remedies for ennui are added in a concluding chapter, but the author is apparently not very sanguine as to their effectiveness, for he concludes that 'ennui will go on ever increasing and opposing itself to the final triumph of the good.' If ennui is a less pressing problem to the American than to the citizen of the old world, the study is nevertheless interesting to the psychologist and the student of literature.

Essai de Classification Naturelle des Caractères. Ch. Ribéry. Paris, Alcan. 1902. Pp. xxiv + 199. 3 fr. 75.

Among the various signs — religious, psychological, metaphysical and pedagogical — of the shift in stress of attention toward the voluntary and emotional aspects of experience, may be included the studies of 'characters,' several of which have recently appeared: Perez, 'Le Caractère de l'enfant à l'homme,' 1891; Paulhan, 'Les Caractères, 1894; Fouillée, 'Temperament et caractère,' 1895; Malapert, 'Les Éléments du caractère,' 1897; not to mention incidental treatment

in works of more general type, such as Ribot's 'Psychology of Feeling.' Of the above, Perez classifies characters as quick, slow, intense, etc., using the motor organization as a basis. Fouillée and Malapert make three main classes, based on the relative dominance of feeling, intellect or will, while Paulhan distrusts the possibility of finding sufficiently constant connections between the various tendencies found in different individuals to justify any such simple scheme of classification. The present author, in a somewhat extended preface, opposes the view of Paulhan, and in the body of his work proceeds from two fundamental principles: (1) The basis for character must be sought in physical temperament; (2) intellect cannot be assigned a position among the primary characteristics. Intellect is at most of secondary importance; sensibility and will are fundamental. The function of the idea is merely to provide for the organization of the sentiments or volitions.

A classification of temperaments is first offered, based on the general tests of relative promptness and intensity of reaction in the sensitive and motor systems respectively, and to the various combinations afforded by these criteria is added a class 'Amorphous,' to include those capable neither of deep nor permanent impressions and with low capacity for motor reaction. Ranged on the basis of relative stability and unity the temperaments would then take the following order: Amorphous, sensitive (subdivided into 'reaction prompt and less intense, and reaction slow and intense'), sensitive-active, active (subdivided into choleric, with reaction prompt and intense, and phlegmatic, with reaction slow and less intense), temperate or well-balanced. The characters corresponding to these temperaments are:

Amorphous.

Sensitive ..... { Affective. / Emotional ..... { Unstable. / Stable.

Sensitive-Active ..... { Affective-passionate. / Emotional-passionate.

Active ..... { Passionate ..... { Unstable. / Stable. / Dispassionate ..... { Feeble. / Strong.

Well-balanced.

In the above terms, it should be noted perhaps that the author uses affective to indicate a sensitive nature which responds promptly and feebly, while an emotional nature implies a deeper seizure and slower reaction.

As regards the propriety of excluding the intelligence from the classification of characters, it would seem to be a question largely of how much one wishes to include. That some persons are so predominantly reflective and analytic in their temper as to have this properly included in a characterization, seems to me unquestionable. Such persons are placed by the author in the class of 'strong, dispassionate' natures, but this certainly does not necessarily carry with it the other implication. Many interesting literary and historical illustrations are presented by the author.

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VERBAL ASSOCIATION.

Zur Psychologie der gebundenen und der freien Wortstellung. P. BARTH. Philosophische Studien, Bd. XIX. 1902. Pp. 22–48.

In almost all languages the order of words in a clause is strictly conventional. The order is fixed in all the Indo-Chinese languages, in the Chinese at least since Confucius, in the Ural-Altaic family of tongues, in the Bantu family, in the languages of America (both in those which, like the Iroquois, distinguish between the sentence and the word and also virtually in those of the intercalative type) in the Malay-Polynesian family, in the Semitic family and in the non-poetical Sanscrit prose. The word-order of the clause is, of course, predetermined in such languages as the Chinese, which is so lacking both in prefixes and suffixes that the grammatical relations of subject, verb and object can be indicated only by the sequence. It is more remarkable that the order should be rigidly conventionalized in languages so rich in inflection as is the Arabic and especially as is the Sanscrit. With the fixed order of the Sanscrit prose, the varied sequences of the classical Latin and Greek seem in marked contrast. Greek clauses show a greater freedom in the arrangement of words than is permitted in any other language, and the literary Latin also allows a wide variation. Nevertheless in the Latin of the common people, as we find it in Plautus or in aphorisms or legal maxims, and in the colloquial Latin of the educated classes, as we find it in Terence, there is a marked tendency toward uniformity. The order is subject, verb, object, or subject, object, verb. In language at large this is the most common order in declarative sentences. The Malay-Polynesian and Semitic languages are exceptional in their tendency to put the verb before the subject.

Although the order of all the Indo-Germanic languages seems originally to have been flexible, the word sequences of all the modern European languages have been progressively conventionalized. The change may be seen, for example, in comparing Dante with the modern Italian poets. As one might expect, the highest degree of rigidity has been attained by the Romance languages. The French, more rigid even than the Italian or the Spanish, allows almost as little variation in poetry as in prose, and the English has been so influenced by the Norman as to allow scarcely more liberty than the French. Yet in spite of the influence of the Greek, the modern Russian among Slavic languages has become fixed as compared with the old Russian. As for the Polish, a literary language has grown up which is more stereotyped than the vernacular. In all the ancient Germanic dialects the order was entirely free, that is, both in principal and in subordinate clauses, the verb might stand at the beginning, in the middle, or at the end. Thus, Ulfilas in his Gothic translation of the Scriptures could keep strictly to the order of his Greek text. But although the freedom of modern German remains exceptionally great, it has become subject to such limitations in prose as the rule that the verb must stand at the end of a subordinate clause or that the emphasized word must stand at the beginning of a question.

The progress of usage in the arrangement of words offers tempting problems for psychological explanation when, as in German, it can often be traced step by step. Of the rule that the verb must stand at the beginning of the principal clause if the sentence opens with a subordinate clause, the writer offers the following explanation, as an addition to the suggestions of Wunderlich upon similar points and as an illustration of legitimate explanatory methods. In general, the arrangement of sentences is based upon association and apperception. The word or phrase will stand first which represents the emphasized notion, that is, the notion which at the outset of the sentence is 'apperceived' or thrown into the focus of consciousness. For the Germanic mind this word is normally the grammatical subject. The placing of the principal verb directly after an adverbial clause or phrase may first have occurred in series of sentences with the same subject. The primitive speaker, fond as he is of talking about himself, retains through long stretches of his narratives the same grammatical subject. In such cases, the subject notion, because recurrent, loses its rank, and the changing circumstances in which the person or thing is placed, represented by the adverbial modifiers, come to the front. The grammatical order, following the order of mental

emphasis, will thus be adverbial modifiers, verb, subject. This order may then easily have been transferred to sentences with a new subject. The transfer would be due not to any logical realization that the grammatical relations remained the same, but rather to a sameness of affective accompaniments. At the end of an adverbial clause there is a feeling of completeness, followed by a feeling of strain. This strain gives place to relief as soon as the verb of the principal clause has been uttered. The relief is doubtless due to the fact that in the kind of sentence most common with primitive German speakers this verb was the most important part of the remainder of the sentence. These feelings, however, follow the wording of an adverbial clause whether a new subject for the principal verb is to be introduced or not, and the sameness of feeling may well have led by association to similarity in the arrangement of words.

This law of association through the 'analogy of feelings,' so largely used by Wundt in his 'Völkerpsychologie' as an explanatory principle, the writer believes to be one of the most important factors in producing uniformity of speech. Another exceedingly important factor has been the desire to save time in expressing oneself. This object has become increasingly important as the number of ideas to be expressed has multiplied. The demand for speed leads to the perpetuation of habits in the arrangement of words because the mechanical action is the one most rapidly performed. The mechanical process affects most decidedly the expression of traditional ideas and the language of ordinary life. It is very probable that a thorough study of Greek aphorisms or of the language of the Athenian common people would reveal conventionalities even in the Greek order.

In view of this almost universal tendency to uniformity, the great flexibility of all the pure Germanic languages is especially significant. This flexibility contributes no little to the energy of the German tongue. When the Frenchman must say in two clauses, *C'est lui que j'ai vu*, the German may say with the force of simplicity *Ihn hab' ich gesehen*. The flexibility of the German, moreover, makes it, like the Greek, an excellent medium for translating other languages.

It should be possible to infer much in regard to racial traits from linguistic phenomena, although the student must be careful both to exclude accidental peculiarities and to verify his inferences by comparing linguistic with social characteristics. Thus, it seems but fair to say that on the one hand, the rigidity of the richly inflected Sanscrit is a special instance of Oriental bondage to tradition, and that on the other, the plasticity of the German is a special instance of Teutonic individualism.

Contribution à l'étude de l'individualité dans les associations verbales. B. BOURDON. Philosophische Studien, Bd. XIX., 1902, pp. 49–62.

The object of this investigation was to determine the average amount of agreement between different individuals and the majority of the same individuals in the first verbal associations suggested by given sets of words, and to explain individual variations from this average.

In the experiment reported, two series of one hundred words each were used. These series were printed in vertical columns on large sheets of paper. The subjects were required to take the words and columns in order, and to write in the blank space opposite each word the first word or phrase suggested by it. A signal was given for the writing to begin. That the rate of progress might be timed, some of the subjects were required to mark, at a signal given at the end of each minute, the point reached on the paper. There were one hundred subjects in all, most of whom were 'students or professors.'

The average amount of agreement between the several individuals and the majority was determined as follows: Words which gave less than ten or more than thirty-nine identical results were thrown out. This procedure left seventy-five words in one series and eighty in the other. The association which occurred most often was taken as the standard result for each word. For each subject the number of agreements with the standard words or phrases was counted. Singulars and plurals of the same word, the same noun with and without an article, and so on, were reckoned as identical. This method showed, for the whole number of subjects and out of the total number of possible cases, an average agreement of 29 per cent. for the one series and 31 per cent. for the other. From the following facts, it may be assumed that the figures for the several subjects, if taken in connection with the average, represent individual tendencies very fairly. Eighty-one out of the one hundred subjects stood either above or below the average for both series alike. The figures for ten out of the other nineteen subject differ very slightly from one series to the other. Moreover, nearly the same figures resulted for thirteen out of fifteen persons who were tested three times over with the same series of words at intervals of some weeks.

The report closes with an explanation of individual variations from the average of agreement. On the showing of the time intervals and of a special test for speed in writing, it cannot be supposed that the subjects who wrote down the greatest number of uncommon associa-

tions took the longest time to think. Neither can peculiarities of education or experience explain peculiarity of associations. Every subject must, for example, have oftener met the phrase *de paille* in connection with *chapeau* than the word *chaussure* or *casque*. The writer accepts the following suppositions: A larger amount of individual peculiarity than the average must, in some cases, be explained by special interest in unusual combinations of ideas. In a few cases, it may be explained by special interest in phonetic or graphic similarities between words. Such associations as *saveur-savon*, *narine-marine* were, however, rare. In many cases, the excess is caused by a weakness of the verbal memory which minimizes the formation of fixed verbal associations. On the other hand, a smaller amount of individual peculiarity than the average is, in some cases, due to that mechanizing of verbal associations which conditions correct and facile speech. In other cases, it is a special manifestation of a more fundamental lack of individuality.

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VISION.

Beiträge zur Analyse der Gesichtswahrnehmung. III. F. SCHUMANN. Zeitsch. f. Psych. u. Phys. d. Sinnesorg., Bd. 30, pp. 241–291, 321–339.

The theoretical motif for this article is a theory of the processes that are involved in the successive comparison of impressions. Schumann's thesis is that judgments of that type are immediate and do not involve the recall of any memory image of the first when the second is presented. The statements of Külpe and Angell are cited in support of the position, and the author reinforces the position with results of his own introspections in connection with all the investigations he has conducted, notably in relation to the time sense. Two general considerations point to the same conclusion: in many senses successive comparison is more accurate than simultaneous, and since the memory image is always of less intensity than the original impression, comparisons of successive sensations on the basis of the memory image would always lead to illusion. In the experiments performed ou visual space comparisons only one subject was found who made use of a memory image in the judgment, and he was a man of much training in drawing.

If the memory image is to play no part in the comparison it is evident that some other set of criteria must be discovered to base the com-

parison upon. Schumann finds these in some concomitant phenomena (Nebeneindrücke) which are however not very clearly analyzed. One experience that seems in part to form the basis of the comparisons of visual extents is a swelling of the field of attention if the second object is too large and a shrinking of the field if the second be the smaller. But whatever the nature of these auxiliary processes may be they must be assumed to furnish the basis of the judgment. In the early comparisons of childhood there is undoubtedly always a superposition of the parts. Later successive fixation takes the place of the direct comparison. At this stage the auxiliary processes begin to show themselves, and in the adult the verbal judgment follows so closely upon them that analysis of their more intimate nature is impossible.

The later parts of the article are devoted to an application of the theory to the explanation of the general optical illusions of distance. The illusion of the arcs of concentric circles, the various forms of the Müller-Lyer figure and many other related illusions are explained as due to the effect upon the judgment of the lines which are to be compared of other parts of the total figure. The explanation reminds one very forcibly of Müller-Lyer's original explanation in terms of confluxion and contrast except that the secondary parts are said to work upon the judgment instead of merely being seen. Both point to the fact that the illusion disappears if the attention is restricted to the lines to be compared as evidence of the truth of their hypotheses.

The explanation of the overestimation of filled as compared with empty space deserves separate mention, although it is another illustration of the same principle. It is said that since the eye can clearly perceive but two or three and even with effort but four or five dots, that when a space is filled with a number they must be perceived successively, and this successive apprehension induces the same mental state as a large extent. The hypothesis is further supported by the fact that when there is but a single dot between the two limiting ones there is an underestimation in place of the overestimation. This is partly due to the ease with which the small number of dots can be grasped, in part to the fact that there is a tendency to compare each half of the line with the whole of the empty line.

Incidentally throughout this article there is a tendency to refer all peculiarities of perception to the laws of attention rather than to eye-moments, although in this as in the preceding article, many of the so-called laws of the attention seem to be suggested by the facts to be explained. The word attention, too, is admittedly used in a vague way, and when defined is given a meaning that is not clearly consistent with the use that has been made of the term in the text.

These three articles are all alike in their method of attacking the problem. All start with unaided introspection. All seem to end in about the same result, the recognition of a problem, with the statement that many factors contribute to the production of a certain end; but that it is very difficult to say what the elements are. In the first paper we are told that visual form is but the recognition of a unity in the constituent lines, but what that unity may be can only be hinted at. In the second we are told that the estimation of visual space is dependent upon the way we attend to the extents, but there is no indication as to why we attend in one way to one figure and in another way to a second figure. Finally in the last article the same set of illusions is explained as due to the different Nebeneindrücke, which affect the comparison, but again there is little success in connecting specific effects with definite causes. While the outcome can hardly be said to be satisfactory, still if recognition of the problem is the first step to its solution, we must regard Schumann's sharply defined statements of these problems as a valuable contribution.

UNIVERSITY OF MICHIGAN. W. B. PILLSBURY.

Ueber Unterschiedsschwellen bei Mischungen von Kontrastfarben. G. HEYMANS. Zeitsch. f. Psychol. u. Physiol. d. Sinnesorgane, XXXII., 38–49, 1903.

In this article the author gives measurements of the perception of differences when contrasting colors are mixed. The colors were mixed by rotating discs with varying amounts of each color, *e. g.*, 0° red, 360° blue green; 60° red, 300° blue green; 120° red, 240° blue green, etc.; and the threshold was determined by the method of minimal changes. The results are summarized as follows:

1. On mixing red and blue green a minimal difference threshold (3.8°) was found when a disc with 55° red and 305° blue green was used. From this point the least perceptible difference increased towards both blue green and red. With 300° red and 60° blue green the threshold (10.8°) was found to be about two and one half times greater than with 55° red and 305° blue green.

2. The minimal threshold for yellow and blue (2.9°) was calculated to be with 214.4° yellow and 145.6° blue. It also increased towards pure yellow and pure blue. When pure blue was used the threshold was 7.4° and with 300° yellow and 60° blue the threshold is about fifty per cent. greater than the minimum.

3. With black alone (black-white series) the minimal threshold was found (0.2°), and the threshold increased almost proportionally

with increase in added white. 300° white and 60° black gave threshold of 3.5°.

Ueber Dunkeladaptation. H. PIPER. Zeitsch. f. Psychol. u. Physiol. d. Sinnesorgane, XXXI., 161–214, 1903.

In this article we find a carefully conducted series of experiments upon the adaptation of the eye to darkness. The subject placed in a dark room looked with the peripheral portion of the eye (10°–15° from fovea) at a square (10 cm. wide, and 30 cm. from the eye), which was illuminated at times from the outside. The intensity of the source of light could be changed and the subject determined the least intensity that could be perceived. Measurements were made every few minutes and until this intensity remained at a constant minimum, at which time it was judged that full adaptation had occurred. Binocular and monocular observations were made with variations of light- and darkness-adapted eyes. The results of the experiments thus give an account of the course of adaptation as well as the time of adaptation.

It was found that the sensitivity of the retina in darkness (*i. e.*, the adaptation of the eye), after having been in a condition of good light-adaptation, increased slowly during the first ten minutes, then more rapidly until the maximum was reached. This maximum sensitivity or this ability to perceive slight amounts of light, taken as the time of full adaptation, averaged, for eighteen subjects, 51 minutes.

A series of experiments upon the author (1) with binocular adaptation and monocular determinations of adaptation time, (2) monocular adaptation and monocular determinations, and (3) monocular adaptation and binocular determinations, gave practically the same results. Considerable difference was noted for (4) binocular adaptation and binocular determinations.

The author concludes that his experiments support an hypothesis which considers the adaptation apparatus distinct and different from the intensity and color-perceiving mechanisms.

Ueber das Sehen durch Schleier. CHR. LADD FRANKLIN AND A. GUTTMANN. Zeitsch. f. Psychol. u. Physiol. d. Sinnesorgane, XXXI., 248–265, 1903.

Mrs. Franklin and Dr. Guttmann here give a preliminary account of some experiments upon visual acuity when objects (test-types) are seen through netting.

Monocular determinations of visual acuteness were made with ladies' veiling (mesh of .57 mm. sq. and quite irregular), with iron gauze (1 mm. sq. mesh), and with two kinds of brass gauze (0.27

mm. sq. mesh, very regular; and 4 mm. sq.), interposed between test-types and the eye of an observer. Variations of the experiment were made by using homatropine or atropine in the observing eye. All the individuals and all the results show a decrease in ability. With the type at a distance of 10 meters, the greatest decrease was found with the nettings at a distance of from 30 cm. to 90 cm. from the eye. The acuteness was greater than this when the nettings were nearer or farther from the eye. In only a very few cases was the ability as great as without the nettings.

Several curves show that a large amount of the loss in ability may be overcome by practice.

The authors suggest for a later article the effects of colored veils, of colored lights and the differentiation of the physical and physiological factors.

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ATTENTION.

Untersuchungen über die sogenannnten Aufmerksamkeitsschwankungen. III. E. WIERSMA. Zeitschr. f. Psych. u. Phys. d. Sinnesorg., Bd. 31, Hft. 2, pp. 110–126.

Wiersma continues his investigations, by extending them to cover comparisons of the periods of perceptibility of slight stimuli during the different moods of the insane. Records for the audibility of weak sounds were taken for five hysterical patients during periods of different degrees of depression and it was found that the capacity for perception was uniformly least when the patient was in a depressed mood. No definite parallel could be drawn for the moods of exaltation. In the same way it was found that in a neuræsthenic there was always a reduced perceptive capability during the times when his flights of ideas were most marked. A second neuræsthenic showed a similarly reduced capacity when she suffered most from fixed ideas. The results substantiate Wiersma's earlier contention that the fluctuations of attention are of subjective origin.

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NEW BOOKS.

Philosophie de l'Effort, essais philosophiques d'un Naturaliste. A. SABATIER. Paris, Alcan, 1903. Pp. 480. 7 Fr. 50. [Twelve essays, ranging all the way from 'Energy and Matter' to 'Prayer,' by the well-known zoölogist and dean of the faculty of sciences of the University of Montpellier.]

La Psychophysique. M. FOUCAULT. Paris, Alcan. 1901. Pp. 491. 7 Fr. 50. [A very interesting and valuable exposition and criticism of psychophysics in the sense of Fechnerism and its development in recent research. Had this work reached us promptly it would have had full notice in the literary reviews of 1901.]

The Higher Realism. D. KEMBLE. Cincinnati, Jennings & Pye; New York, Eaton & Mains, 1903. Pp. 167.

Dei Caratteri e delle Tendenze della filosofia contemporanea. G. VILLA. Pavia, Bizzoni, 1903. Pp. 37.

Evolution, a Lecture. C. WHEDON. Medina, New York, the Author, 1903. Pp. 32.

The Definition of the Psychical. GEO. H. MEAD. Decennial Publications, University of Chicago. From Vol. III. Pp. 38.

Weight of the Central Nervous System of the Frog. H. H. DONALDSON. The Same. From Vol. X. Pp. 15.

The Finer Structure of the Neurones in the Nervous System of the White Rat. S. HATAI. The Same. From Vol. X. Pp. 14.

Scientific Method in Education. ELLA F. YOUNG. The Same. From Vol. III. Pp. 15.

Studies in Logical Theory. JOHN DEWEY (and others). The Same. Second Ser., Vol. XI. Pp. xiii + 388. $2.50.

The Religious Education Association: Proceedings of the First Convention, Chicago, 1903. Chicago, The Association, 1903. Pp. viii + 422.

The Surd of Metaphysics: An Inquiry into the question, Are there Things-in-Themselves? P. CARUS. Chicago, Open Court Co., 1903. Pp. vi + 233.

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Fundamental Problems. P. CARUS. Third Edition. Chicago, Open Court Co., 1903. Pp. xii + 373.

Natick Dictionary. J. H. TRUMBULL. Bull. 25 of the Smithsonian Institution. Washington. Govt. Print. Office, 1903. Pp. xxviii + 347.

Psychological Norms in Men and Women. HELEN B. THOMPSON. Contributions to Philosophy, Vol. IV., No. 1, University of Chicago, 1903. Pp. vii + 188. [Published also in book form as *The Mental Traits of Sex.*]

A Plea for Hedonism. J. C. PALMER, JR. Thesis for Doctorate, University of Wooster. Wooster, Ohio, Herald Printing Co. Pp. 67.

The New Philosophy. S. S. HEBBARD. Chesterfield, Ills., the Author. Pp. 315–408.

Le Problème de Déterminisme social. D. DRAGHICESCO. Paris, Editions de la Grande France, 1903.

Report of the Exploration of the Hayes' Creek Mound, Rockbridge Co., Va. E. P. VALENTINE. Richmond, Valentine Museum. No date.

Recherches sur la vie oscillante; Essai de biodynamique. J. NOÉ. Paris, Alcan, 1903. Pp. 241.

Hypnotism, its History, Practise and Theory. J. MILNE BRAMWELL. London, Grant Richards, 1903. Pp. xiv + 478. 18s. net.

Les Phénomènes psychiques. J. MAXWELL. Préface by CH. RICHET. Paris, Alcan, 1903. 5 fr.

Gehirn und Seele. P. SCHULTZ. Leipzig, Barth, 1903. Pp. viii + 55. M. 1.

La Polemica Leopardiana e C. Leopardi. R. MAZZORI. Rome, Operaia Romana. 1903. Pp. 72.

The Place of Values. G. R. MONTGOMERY. Bridgeport, Conn., the Author, 1903. Pp. 62.

La Morale religieuse et la Morale laïque. CH. LEJEUNE. Paris, Giard et Brière, 1903. Pp. 60. 1 fr. 50.

The Groundwork of Psychology. G. F. STOUT. London, Clive; New York, Hinds and Noble, 1903. Pp. vii + 248.

David Hume and his Influence on Philosophy and Theology. JAMES ORR. New York, Scribners, 1903. (The World's Epoch-Makers.) Pp. ix + 246. $1.25.

Le Mouvement. R. S. Woodworth. Paris, Doin, 1903. Bib. intern. de Psych. expér. Pp. 421. 4 fr.

Notes on Child Study. E. L. Thorndike. Second edition. Col. Univ. Contr., Vol. VIII., 3–4. [A 'program' publication, useful no doubt in its way, but principally notable for its incompleteness.]

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Les Phénomènes d'Autoscopie. P. Sollier. Paris, Alcan, 1903. Pp. 176. 2 fr. 50.

The Laws of Imitation. G. Tarde. Translated by E. C. Parsons. Preface by F. H. Giddings. New York, Holt, 1903. Pp. xxix + 405.

Social Origins. A. Lang. *Primal Law.* J. J. Atkinson. New York and London, Longmans, 1903. Pp. xviii + 311.

L'Année psychologique. A. Binet. 9e Ann. Paris, Schleicher, 1903. 666.

Morals: the Psycho-Sociological Basis of Ethics. G. L. Duprat. Trans. by G. L. Greenstreet. Contemp. Science Series. London, Walter Scott, 1903. Pp. xv + 382.

NOTES.

We regret to announce the death, on September 18 at Aberdeen, of Professor Alexander Bain, the psychologist. Professor Bain represented the highest traditions of British thought, and in him culminated one of the great movements in the history of modern psychology. His two volumes 'Senses and Intellect' and 'Emotions and Will' will always remain classics.

M. Ch. Renouvier, the prominent French philosopher, founder of the movement known as *Néo-Criticisme*, died on September 1. A necrological notice and bibliography may be found in the *Revue Philosophique*, October, 1903.

Professor E. W. Scripture has resigned his position at Yale University. Professor Stearns has resigned the chair of Philosophy in the University of Wisconsin.

Professor Witmer, of the University of Pennsylvania, is temporarily filling the chair in Psychology at Lehigh University.

Dr. J. E. Wallace Wallin, of the University of Michigan, has been appointed Demonstrator in Experimental Psychology in Princeton University.

Professor J. Mark Baldwin of Princeton has accepted a call to the new chair of Philosophy and Psychology in the Johns Hopkins University.

After November 1, all editorial communications for the Review, together with books and papers for notice, should be addressed to Professor J. McK. Cattell, Garrison-on-Hudson, New York. Business communications should be addressed as heretofore to Professor H. C. Warren, Princeton, N. J.

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